THE

MARYLAND FARMER:

DEVOTED TO

Agriculture, Horticulture, and Rural Economy.

VOL. 9. BALTIMORE, MARCH, 1872. No. 3.

The Constituents of Plants in their Relation to the Human Body—Fertilizers.

The farm lies at the foundation of all life.—Through various changes, wonderful and incapable of imitation by the furthest reach of human skill, the earth yields the elements that sustain all the diverse vegetation that teems upon her surface.—Through still more striking assimilations and mutations, the plant is prepared to become the food of all animal organizations. After all, man, the highest type of life, is but, in his bodily form, a curious compound of common chemical substances Take a man of the weight of 154 pounds and analyze him, and the product will be—

	lbs.	oz.	grs.
Oxygen	111	0	000
Hydrogen	14	0	000
Carbon	21	0	000
Nitrogen	3	8	000
Phosphorus	1	12	190
Calcium	2	0	000
Sulphur	0	2	219
Fluorine	0	2	000
Chlorine	0	2	047
Sodium	0	2	116
Iron	0	0	100
Potassium	0	0	290
Magnesium	0	0	012
Silicon	0	0	002
	154	0	000

The oxygen and hydrogen are combined in the form of water. So far the human body. Now what do plants store up from the soil, and from the atmosphere? Analysis proves their principal constituents to be—

Oxygen.	Fluorine.
Hydrogen.	Chlorine.
Carbon.	Sodium.
Nitrogen.	Iron.
Phosphorus.	Potassium.
Calcium.	Magnesium.
Sulphur.	Silicon.

And some others of minor importance.

As might be supposed, from the first analysis, the oxygen, hydrogen, carbon and nitrogen, are of primary importance as food. The carbon and nitrogen build up the solid bulk of the body, and divide the food of the human race into the two great divisions of the nitrogenous, and the carbonaceous.

We see then, that man requires, in the food he consumes, *the same chemical* elements, and, as nearly as he can obtain them, in the same proportions that combine to constitute his own frame. These elements he finds readily, and naturally brought together, and assimilated in the wheat, the potato, the bean and in one or another of the edible plants under his control.

Let us now go a step lower in the scale, and, as man must find the constituents of his flesh and blood in the food he uses, we will perceive that it must follow that to the plants themselves it is also necessary that the elements of fibre and grain should be in the soil from which they spring. Three things are absolutely needful for a healthful vegetable growth—a duly prepared and life sustaining soil, a suitable air to breathe, and the quickening rays of the sun working silently its magical transformations. Over the atmosphere man can exercise no dominion; over the heat of the sun very little, except on a very small scale. Over the earth, however, he is given a mastery that can turn barrenness to fertility. He can do this, by the certainty given by ancestral, and personal experimental knowledge of what means will bring the best results upon the lands he owns. He may, also, add to this experience, the light chemical analysis of the soil, of the plant and of the fertilizer, furnish for his use. The guidance of chemistry in respect both to the soil and the *plant*, must, in our opinion, be supplimented by practical experience. The soil on the top of a hill, may be very different from the soil at the bottom, as well as that in the dry open field from that in the damp meadow. Farther than this, an analysis of the soil may show the proper constituents to be present, and yet, they may not be in a

condition to furnish the required food to the plant. We do not for a moment mean to cast a doubt upon the value of modern discoveries in agricultural chemistry; for we hold that the farming community owes a debt to the indefatigable votaries of this science, that, some day, will be acknowledged in this country as gratefully as it is at present in England and on the continent of Europe. We would only advise caution in applying the assumed results of chemistry upon too broad a scale. In regard to the commercial fertilizers, now so largely sold the case is different. They profess openly to contain, in due proportion, the needed elements of fertility. Find what the soil really needs; and a glance over the journals will give the different materials asserted to be capable of supplying its wants, and stimulating it to bring forth a hundred fold. There is no doubt of the valuable properties of these fertilizers when honestly made. Light, portable, and so concentrated as to be easily handled and applied, year by year, they are growing in favor, as our farmers begin to understand their convenience, and to witness their effects. The one great drawback appertaining to them is, that deception is so easily practised.

The editor of the *Boston Journal of Chemistry* gives his experience in this respect as follows:

"ANALYSIS OF A SCHOONER LOAD OF ASHES, PURCHASED AT 25 CENTS A BUSHEL.

Hydrate of Lime	55 parts.
Silica	13 "
Charcoal	7 "
Ashes, Mixture of Wood & Coal	25 "
	100 parts.

The actual worth per bushel was about 5 cents.

ANALYSIS OF ADULTERATED FISH GUANO.

Water	17.26
Sand	46.00
Phosphate of Lime	8.90
Organic Matter	27.84
	100 00

Sold from $40 to $50 per ton, worth less than $20."

A popular phosphate gave 22 per cent. of water, and only 5½ per cent. of soluble phosphates. The editor very truly adds: "The fact that husbandmen are not generally competent to judge of the value of compounds offered as fertilizers, has led to the placing on sale some of the most absurd substances and mixtures which human ingenuity can discover or devise."

The farmer cannot give up the fertilizer, that is plain. What, then, is he to do? One of two things; either get the fertilizer he employs analyzed, if he uses enough to justify the expense; or, buy only from dealers in whom he can place confidence.

DISEASES OF CATTLE IN THE UNITED STATES.

WASHINGTON, January 31st, 1872.

To the Editors of the Maryland Farmer:

A very important, as well as interesting, document has been recently issued from the Department of Agriculture on the cause, history, treatment of the diseases of cattle in this country, and particularly the alarming one known as the Spanish or Texas disease, which caused such havoc with cattle for years past. The work is instructive in many respects, especially in pointing out the ill effects—almost wickedness—of feeding our domestic animals on musty and mildewed food; showing the poisonous effects of *fungi* on the lungs and system of all animals forced to eat feed contaminated with it.

The work is a large one, embellished fully and handsomely with numerous colored illustrations, and embraces the Report of the Commissioner, and those made to him by Prof. Gamgee on the lung plague, smutty feed and splenic fever; by Professor Woodward, on the respiratory organs and pleuro-pneumonia; Doctors Billings and Curtiss on the effects of coyptoganic growths; H. W. Ravenel on the *fungi* of Texas; and the statistical and historical progress of the Texas disease, by J. R. Dodge, Esq., Statician of the Department. Mr. Dodge says:

"Two years prior to the initiation of the series of investigations, presented in the preceding pages, and long before the public mind of the Atlantic States was aroused to the dangers of the summer transportation of cattle, fresh from the plains of the Gulf States, there was undertaken, under my direction, a systematic investigation of the facts, which were stated and reiterated by reliable farmers in the tract of Texas cattle migration, stoutly denied by Texans, and referred by drovers to every cause but their own cattle. * * * The drovers of Flerida and Georgia, in the past generation, had witnessed similar results from the movement of coast cattle northward. * * * It has been in existence ever since cattle were first driven from the country bordering on the Mexican Gulf to the upland regions of the northward."

We do not see pointed out any sure and specific remedy; but good care, pure water, gentle, light, wholesome feed, with comfortable shelter from storm and hot sun, are recommended as beneficial. This work should be generally circulated, and widely read with care. D. S. C.

TOBACCO IN THE CONNECTICUT VALLEY.—G. Decker of South Deerfield, raised last season on five and a half acres 11,600 pounds of tobacco, or a trifle over 2,109 pounds per acre, and has sold it for $2,436. J. W. Potter, of Greenfield, has raised on two and three-fourths acres 6,346 pounds of very thin leaf, or a trifle over 1,945 pounds per acre, and has sold it for $1,337.25. This is believed to be the first or second lot sold in Franklin county, when the trade first started this fall. J. L. Banks, of Northfield Farms, raised on exactly three acres 8,103 pounds, or 2,701 per acre.

NOTES AND COMMENTARIES.

BY PATUXENT PLANTER.

Dogs.

At last, one public spirited delegate from Prince George's county has proposed a tax on dogs in that county, and it will pass into a law, each representative being an intelligent farmer, and the Senator from the county is too wise a man and proper a judge not to prefer *mutton* to dogs. An example becoming the enlightenment of the present progressive age will be set for the benefit of the whole State, and will no doubt be demanded by every county before long. This is one measure at least which will be hailed by the people as judicious, and tending to advance the interest of agriculture.

Sundries.

Every farmer was pleased no doubt with receiving in your valuable January number the "Chips from the Workshop of an Old Farmer." I trust he will continue to make them fly, and thus monthly supply the kindling for your agricultural fire, until it will brightly blaze in every reader's heart, and the Agricultural State Society be filled with live members, wide-awake to the best interest of the great cause in which they are engaged. His suggestions to the Society should be carried into practice, and I would suggest that it call a meeting sometime in February, inviting all citizens feeling an interest in the subjects mentioned by the writer of "Sundries," to attend and interchange views.

Hybrid Fruits and Vegetables.

There is quite a discussion going on in some of the agricultural journals upon this question. I had thought that no observant farmer would ever deny that different sorts of corn readily intermixed the first season, when planted even a hundred yards apart. I had some years ago a select, pure white corn, which was a quarter of a mile from a field of yellow corn of my neighbor's, and much of it was tinged with yellow, and some grains pure yellow, by being fructified by the pollen of the yellow corn through the instrumentality of bees and the winds, I suppose. We all know squashes and pumpkins will hybridize, and gourds will ruin watermelons and canteloupes. I have seen snap-beans intermix in one season. Tomatoes will do so—the yellow and red perceptibly form an intermarriage. It is both curious and interesting to mark the improvement, but most often, the deterioration of vegetables by this accidental hybridizing among the different species of the same family of plants. A neighbor showed me last year a decided cross between a pumpkin and a symblim, or bush squash; it had the squash color and taste or flavor, with the size and form of a large potato pumpkin—and did not dry up on the vine like a squash or symblim. He promised to save the seed and try it this year, hoping to have discovered a new variety of the genus *Cucurbita*.

Fencing and Fences.

A member from Prince George's county has introduced a bill upon this important subject in the Legislature; its details I am not well instructed upon. There certainly is great need of such a law, to produce harmony and settle constantly occurring ill-feeling between neighbors, and vexatious, expensive litigation. But may I be pardoned for suggesting that it is a serious question whether in the present state of things—scarcity of labor, increasing scarcity and high price of fencing material—there should be any law requiring a man to fence at all; whether the well settled law, as at present recognized by jurors as the common law of the State, should be disturbed by statute, this common law being, that every man should take care of his own stock, and fence or no fence, be liable for any damage or trespass his stock may commit. In many cases, especially on large farms, the cost of a substantial fence, enclosing and subdividing the farm, would be more than the cash value of the land. Some of the prettiest farming, and less quarreling about trespass among adjoining landholders, is in countries where there are no fences, and all stock is stabled, yarded and soiled, or confined in small lots about the homesteads; the division or boundary lines between different farms, only marked by a path or a line of trees, commonly fruit trees—sometimes with two rows, one on each side of the line of division, which leaves a space wide enough for a road, to be used in common by the owners of the adjoining farms. This is the case in the best farming districts of France, in the tobacco region of Connecticut, and other countries. Such a system would certainly be the proper and most economical one for the prairies of the West, and the thinly wooded sections of this State. Yet if it be thought too great an invasion of old habits and customs to do away with all fences and gates, then let there be a stringent plain law for the government of all those who are disposed to join fences with their neighbors, as well as for those who do not choose to join, but prefer to enclose their property by itself, or have no enclosure, but farm on the soiling system, which by the way has been advocated in the North by the most enlightened and moneymaking farmers.

Several counties in the State have fence laws, but they are, I believe, not generally enforced. Some are very excellent, such as the local laws on this subject for St. Mary's, Anne Arundel, and one or two other counties; but, if not obeyed by the people, they are useless.

Dwarf Pears.

In the short article on pears, on page 26, a few pears are recommended as especially doing well in the Middle States. To that list I would suggest be added the Winter Nelis, Bartlett, Belle Lucrative, and Buerre Bosc. These I have found doing uniformly well in Maryland. By the bye, it is not Vicar of *Wake*-field--that good old English Vicar has had no fruit named for him, (unless it be a gooseberry, the wine from which he relished and dispensed with such generous and confiding hospitality,)—but it is Vicar of *Wink*-field, taking its name from a French Vicar, who discovered it growing in a hedge, so it is generally reported.

The Farm of Clement Hill, Esq.

The farm of this gentleman alluded to in my last communication, is a first-class estate in size, and in its management. The buildings are large and convenient, and farming is conducted on an extensive scale under an improved system. I have seen 400 acres in corn growing in adjoining fields, and it was a noble sight, as I beheld it from the high hill on which his house stands; this house, being small, he calls his country "box," where he has often entertained the highest dignitaries of the land, including Presidents and Foreign Legations, who desired to rusticate and enjoy rural life, amidst his flocks and herds. His herd of Short Horns is fine, and has a high reputation. He breeds largely horses for the farm and the road, and would have fine flocks of sheep, but the dogs denied him the privilege.

Agricultural Department.

The last report of Commissioner Capron, now being distributed by his successor, is one of the ablest and most instructive on general subjects that has ever emanated from the Department. The present Commissioner, Judge Watts, seems inclined to dispense in future with the publication and free distribution of the Annual Report, and make the Monthly Reports of a higher order and more voluminous, or (if I understand him) to run a monthly National Journal. This monthly would become a rival of the Agricultural individual Presses of the country. It would be unbecoming in a nation to thus interfere with private enterprises, and be discriminating between agriculture and other great public interests, such as the mercantile, manufacturing and professional pursuits. Why should not the Government publish a journal in behalf of these respective callings as one in the interest of agriculture. These Monthly Reports were intended merely to give accurate statistics of the state of the crops, stock, &c., for the information of the farmers as to the supply and demand for various products, that they might intelligently assist in regulating prices.

The Annual Report should continue, like the Patent Office, and all other reports from the different Departments, to exhibit to the whole people of the country what had been the work accomplished during the year, and set forth the results of science and practical experiments under different theories, not only in this country, but in other nations. The distribution of seeds is a humbug. The distribution of rare plants would be beneficial, as also the distribution of seeds of any newly discovered vegetable or plant, or any new variety of an old kind of cereal, vegetable, plant tree, or even flower. But the thousands of packets of old sorts of flower and other seeds is an enormous expense without any benefit to the farmer, and a positive injury to the many seedsmen in the country, except the few fortunate ones who thus have a rich customer, in the Government, for all their old worthless seeds. The Seed Department ought to be either broken up or curtailed. The propagating department ought to be increased, as it will be, if properly managed, of inestimable value to the whole nation.

For the Maryland Farmer.

POTOMAC FRUIT GROWERS.

WASHINGTON, *Feb.* 8, 1872.

This active society held its monthly meeting for February, on Tuesday last, at the Board of Trade rooms, in Washington, Vice-President Gillingham in the chair, and P. H. Folsom, Secretary. There was a fair attendance, and the discussions were instructive and interesting, on various subjects, for the advancement of the society, and the promotion of fruit raising in the Potomac region.

The annual election of officers, for the ensuing year, took place, and resulted in the choice of Chalkley Gillingham for President; J. H. King and S. E. Chamberlain, Vice-Presidents; H. Amidon, Treasurer; P. H. Folsom, Secretary; and Wm. Saunders, B. Bryan, E. P. Howland, and John Saul, as the Executive Committee.

John H. King was announced to read a paper, at the next meeting, on the Honey Bee, discussing its effect on orchards and fruit. After some general discussion, adjourned till the first Tuesday in March.

This is a live association, and its influence is being felt by the fruit growers who faithfully attend its meetings, and is particularly beneficial to young beginners and amateurs.

The discussions and experience of the members have established, among other useful facts, the benefits of placing old lime and ashes around the roots of fruit trees—of pruning trees to grow low branches—of putting sulphur on grape vines—of sprinkling wood ashes, ley and soap suds on trees and foliage—of driving nails in the bodies of trees—and of mulching small fruits; together with many other useful facts.

LAND MARK.

THE WHEAT CROP---CAUSES OF FAILURE.

To the Editors of the Maryland Farmer:

When doctrines, such as contained in the article headed as above in your January number,* are advanced by parties who ought to belong to the highest authorities of the land in agriculture, it becomes the duty of every intelligent farmer to step to the front and combat them. If it had not been for the source from whence these doctrines originated, it would hardly have been worth the trouble to notice them, but as many a farmer may be tempted, *against his better judgment*, to adopt them, considering *who* advocates them, we think it our duty to make a few remarks. The article mentioned states:

"The ground is again ploughed in the spring, and sowed with oats, and upon the stubble of this all barn-yard manure is put; then ploughed again and sowed with wheat. This delicate plant is thus subjected to the rawness and grossness of barn-yard food, with all its germs of flies, worms, lice and bugs—*seemingly* a sufficient cause of the unsuccessful growth of a grain so pure and delicate as wheat."

First and foremost we must remark that, the mode of applying the manure is *faultless* and *wrong* After the oats have been taken off the ground the manure ought *instantly* to be hauled on the *stubble*, spread directly after the wagon, and turned under immediately after spreading to a depth of about two inches. Thus prepared it ought to *remain* undisturbed for three or four weeks, and then harrowed crossways. About August 1st plough again, and turn a five-inch deep furrow. Let three or four weeks pass, and then harrow well and drill your wheat. Thus managed, the fermentation and amalgamation of the manure has taken place in the soil. By turning the soil back at a depth of five inches, the manure still remains three inches below the surface, a proper distance for the nourishment of the wheat plant, and at the same time remote enough not to be evaporated by the influence of atmosphere and heat. Of the extreme delicacy of the wheat plant I have never seen any proof; on the contrary, it is one of the hardiest plants of the cereals, and only excessive wet or drought and heavy frost will destroy it; and it is as gross a feeder, and far more hardy, considering its size, than the corn plant.—"*Bury it deep*," (the manure.) Why, the author might rather have said, "Do not manure at all." We all know that atmospheric influence is absolutely necessary for the process of fermentation, and if the manure is *buried deep*, which means *at least* six inches, it is removed from this influence. In dry seasons it will fire, not being able through the absence of atmosphere to amalgamate with the soil, and in wet seasons it will simply drown. The principal object of the advocate of this system is, as he says, to put the manure at such a place that it may be undisturbed during the different ploughings, and remain for the benefit of the third crop! A rather bright idea, that the roots of the corn and oats will not find it, even if deposited to a depth of six inches or more! Why, their rootlets will go in search of food, and they will find it, even if one foot or more distant. This being the fact, what amount of manure will be left for the wheat? Believe me, a *very* small portion, if any. I beg to be understood that I do not war against the rotation mentioned in the article, but against the absurd idea that manure brought into the ground to the *first* crop, can be preserved there for the benefit of the *third* crop, without loosing its quality as manure. Before concluding these remarks we cannot omit to advocate the practice of bringing the manure *direct* from the stables and lots, on the soil, in such shape as to plough it under as quick as possible. At least 25 per cent. of manure is saved thus. To apply manure thus it is of course required that the mixed husbandry system is adopted, and still better if soiling is practised Under these circumstances there is always a ready plat to receive the manure. If top dressing is desired, only *compost* should be applied. It can be made in the field where wanted. Every part of the farm produces the *bulk* material for compost, and other ingredients used, such as lime, etc., etc., can easily be hauled without loss of time.

L. A. HANSEN.

COLUMBUS, MISS., *January*, 1872.

*See January Number page 20.

CONCERNING PEANUTS.—The *New York Standard* dwells learnedly upon peanuts. First, as to the varieties: "There is the African peanut, the Georgia peanut, the North Carolina peanut, the Tennessee peanut, and the Virginia peanut. Their qualities improve in the order in which they are here set down, the first being the poorest and the last the best. If you want peanuts, see that you get the sort coming from the Old Dominion." Then, as to the quantity consumed, the editor tells us: "There are annually consumed in this country 800,000 bnshels, valued in the wholesale market at about one and a half million dollars, so that the sum paid yearly by the consumers cannot be much less than three millions of dollars. Virginia produces nearly one-half of this quantity, and Tennessee over one-quarter, while about one-eighth is raised by Georgia and North Carolina, Africa furnishing us the other eighth.

A New York chiropedist cures corns on the 'similia similibus' plan, by pills of corn-starch.

Greensboro, North Carolina, shipped over twenty-five thousand mocking birds the past season.

For the Maryland Farmer.

TO YOUNG FARMERS.---NO. 3.

In my last, I spoke about raising a large yield of corn and potatoes. In this article we will consider the *raising of wheat.* There is a general complaint —a fact too—that the yield and quality of wheat, in Maryland and Virginia, are deteriorating; and the inquiry is, how shall it be prevented and restored. The answer is, by recuperating the soil and bringing it back to original condition, or supplying the exhausted elements. This is not done alone by manuring, though that helps; but wheat does not like raw or undiluted manure, but it likes homeopathic doses or preparations, well mixed with the soil—completely incorporated with the natural elements of the earth. This is effected, in a great measure, by deep plowing and perfect pulverization. Liberal manuring and growing *hoed crops*, as corn, potatoes, &c., one or two seasons, then fine, deep plowing and thorough harrowing, for a crop of wheat; which process enables the growing plants to appropriate such ingredients of the earth as they need, and secures a more constant retention of needed moisture, than when the ground is moderately plowed and continually cropped with sowed crops of wheat, oats and rye.

But very important and efficient too, is the effect of *clover*, the large kinds, and better still is *lucerne;* why? because the large sorts of red clover, and more, the lucerne, make heavy, long roots, almost equal to parsnips, which penetrate the ground deeply, nearly a foot, sometimes more, and suck up and devour the new elements of new ground, much below what other crops get, besides opening the way for the rise of moisture from below, through spouts or pores made by these long tap roots; and besides, when plowing these crops under, the plow share cuts them off, at the depth which it runs, and leaves the pieces below to rot and form a much needed *humus* and rich fertilizer, which greatly aids and stimulates the growth of the crops which follow; this effect and benefit, of those green-soilers, I have more than once proved; so that it can safely be said, that lucerne and the giant red clover, liberally sowed and plowed under, are the cheapest and handiest restorers of exhausted wheat lands, when attended with deep plowing, that the farmer can use.

If sowed in the fall, a clip of good hay may be cut early, the next summer, while it is young and tender; then another good clip may be cut later in the season, and still leave time for it to grow sufficiently to cover the ground; then late in that autumn let it be liberally *mulched*, or top-dressed, with fine manure or compost; the next Summer it will give a still larger clip of hay, and also in early autumn; when it may be plowed, 7 to 10 inches deep for corn the next spring, but should be again plowed five or six inches before planting, all to be done in a careful, thorough manner; the corn may be taken off early, and wheat drilled in that fall, without plowing, and a good yield may be expected; it may be, at the same time, liberally seeded down with clover as before; and after the harvest a fair clip of tender hay may be cut; then, in late autumn it should be again top-dressed—next summer a fair crop of hay can be cut, and in due season be plowed under and wheat again drilled in that fall, and a good profitable yield be very sure; and in this way old lands may be restored, or new good lands be preserved from exhaustion.

This course may be varied, by substituting other crops in place of corn occasionally, as potatoes, roots, spring oats, &c., but the clover or lucerne, the deep plowing and mulching must be kept up; and the fertility or tilth of the land will be surely preserved and at the same time profitable crops be regularly procured. But continual cropping with winter crops, without hoeing and mulching, gradually and surely both hardens and robs the ground, and meagre wheat crops will as surely be the result, no matter how good the soil was originally. It is not enough merely to manure the ground, but it must be deepened, and stirred, and darkened and sheltered from the sun-rays by mulching—while the lucerne roots are great sub-soilers, as well as top-feeders. Those who have never proved or practised *mulching*, have little idea of its usefulness, both in stimulating meadows to vigorous growth and yield, and in preserving and invigorating winter-wheat, if the mulch be spread on it late in autumn, as soon as the ground becomes frozen. The grain is protected from winter-killing, by freezing, thawing and heaving out; while the young leaves of the meadow are protected from the sun-heat, in spring, before it is sufficiently grown to shade and shelter itself;—and in both cases—wheat and grass —are lightly fertilized and stimulated, by the leaching or dripping of the surface manure to the roots in winter and spring showers. No one operation is more profitable than this mulching, as I have often seen tried and proved, in both cases.

Therefore, my young agricola friends, I advise you, early to adopt the better way, as fast as you can learn it, in all your operations; and not stubbornly and unthinkingly follow some old way, simply because it is an *old time* practice; such a course never leads to improvement or progress in anything; but if you read and think and observe, you surely will improve, advance and be happier as well as greater.

LAND MARK.

Colorado is called the Switzerland of America.

For the Maryland Farmer.

PLEURO-PNEUMONIA.

In accordance with my promise published in a previous number of the *Farmer*, that I would communicate all new developments pertaining to this much dreaded cattle plague, and justly so, I am happy to state that no new cases have come under my notice, neither have I any knowledge of the apparent existence of the disease at this writing.

Being very desirous to extend my investigations of the characteristics of the disease under a great variety of circumstances, in different localities, and at different seasons of the year, and to ascertain and publish the treatment which has proved most successful, I have corresponded with numerous noted graziers in different parts of the country, and I am not in the receipt of any information of the present existence of the disease in any locality from which I have received returns.

I sincerely hope that I may never hear of it again, but I have no grounds for such a hope, knowing as I do, that it is liable at any time to break out in districts hitherto exempt, as well as in those where it has previously been an unwelcome visitor for a time, and departed as suddenly as it came; and though, in some instances, years have elapsed with no traces of it, when it suddenly re-appeared.

I find in the last issue of the "*Practical Farmer*," an article from the practical pen of its able and thoroughly sound contributor, C. Harvey, an article on the treatment of this disease from which I propose to extract, as it is interesting and its statements may prove more effective as a means both of prevention and cure than anything previously suggested or tested.

Mr. H. states that "some months since an article came under his notice recommending sulphurous acid as not only one of the best disinfectants known, but as containing great medical qualities in cases of Pleuro-Pneumonia in cattle, surfeit in horses, &c."

He also states that he had purchased from the Baltimore drove yards, a lot of Virginia steers, one of which, soon after, was discovered to have difficulty in breathing, with an occasional cough. It was at first believed to be an obstruction in the windpipe; the difficulty of breathing increased, and the animal being beef, was slaughtered, when the lungs were found to be diseased, being much enlarged and inflamed.

This sick animal, for convenience of treatment, had been removed from the purchased, or main herd, and placed with a few "home raised heifers," one of which was similarly attacked a few days subsequently, and in two or three days was so debilitated that it could scarcely travel without assistance.

This animal was placed in a close stall, and compelled to inhale fumes of burning sulphur. The first effect, as described by Mr. H., was that of considerable strangulation, but the treatment was persevered in, "the stall kept close and the animal compelled to remain for a time," how long not stated, "enveloped in this vapor." This fumigation was continued three times in twenty-four hours; when the patient became fond of the fumes and would lap it as it arose from the vessel in which the sulphur was burned. This treatment was continued as above described for about two weeks, when the animal commenced to eat, recovered, and "*became one of the fattest and heaviest* animals of her sex *in the county of* Delaware, Pa."

This, Mr. H. states, occurred late in autumn in 1870; and that "there appeared to be an unusual amount of coughing in the herd, though it was so slight, that it might have been imaginary."

Mr. H. says that he communicated a few months since to a neighbor who had a numerous herd of cows, the treatment with sulphur fumes, which he had tested, as above described.

There was a disease among a number of the cows of this dairy, and some of them had died, which was supposed to have arisen from want of proper ventilation in the stable.

The sulphur treatment was resorted to at the suggestion of Mr. H. and the disease was soon arrested.

It is proper, however, to state, that in this case, other remedies had been administered previously—but it is evident from what Mr. H. states in the conclusion of his article, that he is confident that the disease, whatever it was, was checked and cured by the use of the sulphur fumes. It is very evident to the writer that the sickness in the cases of Mr. H.'s animals, was unmistakably, Lung Plague, or Pleuro-Pneumonia; and that it was brought upon his premises in the animals purchased from the drove yard; also that the infection was communicated to the animal reared on the place; and also that the timely separation of the animal which was slaughtered, from the herd, possibly saved its becoming more general.

Though I am well satisfied that a majority of and perhaps every animal of his herd had an attack of the disease, though of so mild a type that possibly no case would have proved fatal had no treatment in the way of preventive or curative measures been resorted to.

I neglected to state that Mr. H. further adds that his barns and stables were kept well fumigated for weeks after the herd was stabled.

The efficiency of sulphur, and sulphurous fumes in destroying fungi, animalcule, and larger animals, also as a disinfectant, has long been conceded, but

in all my research for information relative to the characteristics of the disease under consideration and for the best preventives and remedies, the experiment of Mr. Harvey with the use of sulphur fumes, is the only one that I have found.

I desire to reproduce a recital of his experience with sulphur in the "*Maryland Farmer*," that its readers, many of whom I know to be owners of valuable herds, may have the advantage thereof.

I hope that all who are so unfortunate as to have their animals attacked with the disease, will test the sulphur fumigation thoroughly.

I would state in this connection, that it should be administered with judgment, that the remedy may not prove more fatal than the disease. A few inhalations of sulphur fumes at a time and repeated at intervals of two hours, for a period twelve to twenty-four hours, would be ample, in the opinion of the writer, and will be equally as efficient, and less dangerous than too long continued use of it at once.

The experience of Mr. Harvey in the case of his restored heifer, that she fattened remarkably after her recovery from the attack, is not unusual; on the contrary, it is the common result, of which I have ample testimony.

Had Mr. Harvey been familiar with all the symptons of Pleuro-Pneumonia, and the peculiarities of the disease, which I explained quite in detail in the December and January Nos. of the "*Maryland Farmer*," he no doubt would have satisfied himself that a large portion of his herd had the disease sooner or later, but in so mild a form as to pass unobserved. Of a herd of eighty-five head in Harford county, Md., thirty animals had Pleuro-Pneumonia of a marked type, though but nine of them succumbed. The only treatment in these cases, was a free use of alcoholic stimulants, and small doses of nitre.

But the owner informed me that the result of his observation induced the belief, that about as large a proportion of those treated died, as of those which received no treatment, and that he had since satisfied himself that there was greater safety in inoculation with the disease, than anything else yet discovered.

This opinion I most heartily endorse. He stated that his animals which had the disease severely, were more thrifty after they recovered than were those which escaped.

This has been the experience of Australian herdsmen also. Cleanly, well ventilated stables, and a free use of disinfectants, if not a thorough preventive of attacks of this, and other diseases, will be found very beneficial in modifying them.

Respectfully yours,

J. WILKINSON.

BALTIMORE, MD.

CULTIVATION OF INDIAN CORN.

There is perhaps no crop cultivated by the farmer of more importance than Indian corn. It makes his beef, mutton, pork and poultry. Entering so largely as it does in interest of the farmer, he naturally devotes much thought and study as to the best way of growing a full crop. The common practice in this country is to plow up an old sward, from six to eight inches deep, and thoroughly pulverize with a harrow, "which in my opinion should never be neglected, as it smothers the grass between the furrow slices, and fills up all inequalities of the ground; it also makes the old sward decompose more rapidly, so that by July it is ready to furnish the required amount of plant food to hasten the crop on to maturity, and be out of the way of early frosts." After thoroughly pulverizing the soil it is marked out in squares four feet and a half apart.—All low, wet ground is then manured in the hill with old, well rotted compost or other fertilizers, the object being to start the corn early in the spring rather than to carry it through the entire season. If too much manure is put in the hill it is very apt to burn in a dry season, causing the leaves to roll and wither generally about the time of setting, and often shortening the crop one-half. High ground, in a good state of cultivation, should not be manured in the hill; on such ground the young plant gets on fast enough without it. If the farmer has manure designed for his corn crop he had better spread it over the ground broadcast, so that after cultivation is dispensed with the fine fibrous roots may have as much feeding ground as possible, in order to mature the fine, large ears he naturally expects to find at husking time. The mode of cultivating corn varies according to the different ideas of men, and the different kinds of soil. My practice is, as soon as the corn is up to replant all missing hills, then turn a furrow from it running as close to the hill as possible, a one-horse harrow is run on the ridge, twice in a row; after the field has been over, we run a cultivator twice in a row the other way. The field is now clean and mellow, or ought to be, if properly done.

During this process the corn is generally hoed, the hills cleared of weeds if any. When the plant is four or five inches high we throw a light furrow to it, plowing out the strips between with a larger plow, and as before using a cultivator twice in a row across the ridges and once the other way, using the cultivator wider than before. This brings us to the middle of June, and the corn growing rapidly; we now commence plowing it for the last time, throwing a good furrow well up to the hill, covering all weeds, grass, &c., plowing out the strips as before, after which use the cultivator both ways, and it is finished, as it will now take care of itself. —*Cor. in Germantown Telegraph.*

SMUT IN WHEAT.

Sir—At a recent meeting of the East Lothian Farmers' Club, when the subject for discussion was "This year's wheat crop—the ravages of insects," one of the speakers alleged that much nonsense had been spoken in the course of the debate, and, judging from what has since been spoken and heard on the subject, it is certain that such an opinion is not confined to the individual alluded to. The club meets monthly, on market days, the discussions taking place after dinner, in presence of a reporter, and the uttering of nonsense upon such occasions is not likely either to further the objects of the club or do credit to the farmers of East Lothian. In making a few remarks upon some of the subjects noticed at the meeting in question, I shall first consider the preparation of the seed and the soil for a wheat crop, as being more particularly connected with the operations of the farm at the present season of the year, and upon another occasion recur to some of the insects injurious to the wheat plant.

It has long been the practice to prepare the seed, previous to being sown, with compounds supposed to prevent smut in the succeeding crop. One kind of smut is found occupying the ear in place of grain, is round, covered with a skin (and hence, perhaps, the provincial name of "ball,") filled with blackish powder, offensive to the smell, and which is injurious to all the products of which flour is a component part. In separating the grain from the straw, the smut balls are often broken by the threshing machine, and still more frequently by the flail, and their black dust, which is seeds, may be seen adhering to the grain. There is no doubt of smut being a vegetable fungus, and that the vitality of its seeds can best be destroyed when seen on the grain by the various specifics used in preparing the seed. The accepted theory of the propagation of smut is that the seeds or spores are taken up by the roots of the wheat, and carried by its circulating fluids into the ovary of the flower, where the fungus is developed. Whatever degree of truth there may be in this theory, the experience of ages has proved that unless the seed has been properly prepared by a preventive for smut, the crop seldom escapes injury from this fungus. The various preventives of smut used throughout Britain are supposed to act either by washing off or destroying the vitality of its seeds adhering to the grain, and anything whatever which will effect this object without injuring the germinating powers of the wheat, may be used with safety. The "pinch of snuff," which may be called the "Durie Pickle," would undoubtedly prove an excellent preventive of smut when used as a drier to wetted wheat, but would prove too expensive at the present time. The propriety of taking precautions against smut was so impressed upon me in early life, that the dressing of seed wheat was never dispensed with except in cases when a small quantity of unprepared seed was wanted to finish the sowing of a field, and in such instances only were the crops infested with smut — Wherever wheat is extensively grown, a few smutted ears may occasionally be seen, but the farmer who neglects to use one of the simple and inexpensive preventives of smut, may justly be considered as foolhardy. In former times, when seed wheat in this country was dressed with liquids injurious to vegetation, such as stale urine and strong saline pickle, the life germ of the seed was often weakened, if not entirely destroyed, and more especially when the wheat was of a previous year's growth, arising, no doubt, from the increased absorbent powers and weakened vitality of the old seed. Ears of smut balls, and ears of perfect grain, are often found on the same plant, and occasionally smut balls and perfect grain in the same ear, and more than once I have seen a grain partly smutted and partly sound.

For more than a dozen of years past I have grown experimentally on a small scale many new varieties of wheat, without using any means to prevent smut, and except in cases when a variety was first added to the collection, no smut has been found. The practice followed was to winnow the chaff from the grain with my own breath, and, over a table, to separate the good seeds from the bad with my fingers. No change of seed, soil, nor of climate can be said to have taken place, and at present no deterioration can be traced in any variety.

There is another kind of smut where the grain and chaff come forth from the sheath blackened and destroyed, which is often plentiful amongst barley and oat crops, but rare amongst growing wheat, and is generally blown off by wind, and in such cases the grain is but little injured. About half a century ago this kind of smut was always present in crops of a variety of wheat then pretty extensively grown under the name of Dudgeon's Wheat, and was characterized by the flag leaf withering into a brown color when the ears appeared. More recently, a variety raised at Castlemains, Dirleton, with a club-shaped ear, inherited this defect to a considerable degree. At the present time, with careful inspection, this kind of smut may be detected all over the country.

An opinion was brought forward in debate, that land which had carried a crop of beans ought to be twice ploughed, with a view to benefit the following wheat crop. The ploughing of such land twice assists the removal of couch grass and other root weeds, as well as kills the slug, or brown snail, but militates against the crop. If the question is put in the shape of whether the wheat plant thrives best on loose or a compact soil, there will be little difference of opinion amongst practical farmers.

I am, etc., PATRICK SHIRREFF.

Haddington, Nov. 7, 1870.

—*From the North British Agriculturist.*

RECLAIMING A SWAMP.

On my farm I have a swamp of eight acres, which was without doubt a pond, the outlet of which was once filled with small sticks, placed there by the beaver, the prints of whose teeth are yet visible on the rotten wood.

This swamp rests on a bed of pure blue clay, varying in depth from two to ten or more feet, and is composed almost entirely of pure swamp muck.—Some twenty years ago, with a view of making it into a meadow, I ran a ditch around the outside and through the middle, four feet wide and three and a half deep. I then cut and burned the logs, spread the ashes, and seeded it to herdgrass, clover and red-top, and applied at the same time a liberal top-dressing of well rotted manure. At the second mowing from this time it was as beautiful a meadow of grass as I have ever seen in all my life. I cut a single rod of grass and weighed it by itself, and it made an average of four tons of well cured hay to the acre. When I had reclaimed one-half of this swamp, I entered it for the premium of our State Agricultural Society, which sent their committee to examine and report.

This committee gave it as their opinion, that the yet unreclaimed half of this swamp was worth as it there lay a hundred dollars an acre, and gave me the first premium of the State Society. It is quite sure I think that I felt a little vain over the success of the enterprise, as it added eleven large loads of hay, and, as I then supposed, of the very best quality; but imagine my surprise when upon placing it before my cattle it vanished like chaff before the wind, leaving scarcely substance enough in my cattle to cast a shadow. I found that I was badly swamped.

Looking at this piece of reclaimed land from the top of a hill, three fourths of a mile off, it was a most beautiful sight to behold in contrast with its surroundings of rocks, hard-hacks and bogs. While the seed sown upon the swamp continued to produce a fair crop of hay, I continued to mow and gather in the crop, but in a few years the manure spent its had strength, and the swamp and bog grass began to take the place of the cultivated grasses, and I abandoned it altogether as a meadow, not deeming it best to take the manure from my uplands, where it would produce the best of hay, and put it on a swamp, where it would only produce a very inferior article. It would have been more pleasant to have chronicled a perfect success in the reclamation of a swamp, than to acknowledge its failure, but my duty as a correspondent of your valuable paper re- quires of me that I should give a fair statement of both sides of this very important subject.

This experiment was laying out at a dear rate, and when I see in the agricultural papers letters recommending large outlays in reclaiming swamps, I am disposed to say, take care that you do not get swamped.

There is a striking analogy between an animal and a vegetable. Both are alike dependent upon suitable food for their growth and development. Oats are the most natural and appropriate food for a horse, yet a horse will not long continue in good health confined to oats as his only food. So swamp muck is very useful as a part of the food from which to grow a crop of hay, yet swamp muck alone will only make a very poor quality of either hay or corn, or of any other crop; in fact the greater the variety of food we give either to a crop or an animal, the better will be the quality of either. Some animals and some crops require a greater variety of food than others.

Indeed, if we would make a first-rate crop, or a first-rate animal of any kind, the greater the variety of soil for the crop or of food for the animal, the more sure will it be of success in either case.

The best use that can be made of swamp muck is to throw it into heaps immediately after haying, and let it remain until the first sledding in the forepart of the winter, and then be drawn upon the uplands, and as much of it should be placed in the barn-yard, in the barn cellars and under the stable floors, as can be kept without being in the way, and as much as possible be placed in large heaps for future use in the compost heap.

It should be constantly borne in mind that the liquid portion of the manure, if well absorbed in muck, is fully as valuable as the solids, either for a top-dressing for meadows, or for plowing under for tilled crops. Swamp muck, however, should not be used until it has laid at least a year out of the swamp, or long enough for all the bog roots to be fully decayed, and past any probability of germinating, or they will take root on the upland, and a crop of bog grass on upland will be the result, and the roots if they get a thorough foothold are very difficult to get rid of.

Uplands, with a sufficient quantity of muck mixed in to make the soil of a dark color, are in a better condition to withstand a long drought than lands that have been enriched with more active manure, as it will absorb and hold moisture much longer, and give it off as it may be required for the use of the plant. In this correspondence I have given the result of my own experience and observation in reclaiming swamps.—*Cor. Germantown Telegraph.*

It cost us too much to live an earnest manly life, but it costs us a great deal more not to do so.

THE CASHMERE GOAT.

Animals at various times have been introduced into this country under the name of Cashmere Goats. Probably the first which were claimed to have been brought directly from the Himalaya Mountains, were introduced by Dr. J. B. Davis, of South Carolina, in 1852. Since that time, goats presenting precisely similar characters have been imported from Asia Minor, some of these have been called Cashmere goats, and others have been called Angora goats. We may remark in passing, that as early as 1836 some Angora goats were brought from France to New York, and that from descriptions given of them, there is reason to believe they were of the same variety as those introduced under this name at a later day.

The fleece of the animal sometimes called Angora, and sometimes Cashmere, consists of long silky hair. Dr. Davis brought from India, as he stated, a portion of what is called a Cashmere shawl. It seemed to be composed of a material of shorter staple and much more downy than the hair of the goat above named.

Mr. Davis in a letter dated Columbia, S C., December 23d, 1852, stated that he brought to this country with the goats before mentioned, some Thibet (or Tibet) goats, of which he spoke as follows: "The Thibet has wool under the hair, which is combed out. * * * * The wool or down of the Thibet yields about half a pound at a combing, and is worth $20 per lb." In 1854 he exhibited a sample of the wool of the Thibet goat, and he was understood to state that though shawls were made from the fleece of the long-haired goat before spoken of, it was from down of the Thibet goat that those of the greatest value are produced.

The description given by Dr. Davis of the Thibet goat, agrees with that given of the *true* Cashmere shawl goat. In an article attributed to *Chambers' Journal*, the goat which produces the material for fabrics alluded to, is spoken of as "having, in addition to a heavy coat of hair, an abundant coat of *soft down*."

It is said that this goat loses its fine down when attempted to be acclimated in any other land. On its native mountains its habitat is just below the snow line. "It has been introduced into Bengal, into Cashmere, into the Punjaub, into Persia, and into several parts of Europe, and has undergone different modifications at each remove. * * In fact, the shawl-goat of Thibet soon degenerates into the common goat of the country."

This statement does not seem to hold good as far as California is concerned, as samples of fleece from that country have been exhibited, containing the down alluded to. The above cut represents a female goat.

PUMPKINS AND TURNIPS WITH CORN.

To the Editors of the Maryland Farmer:

In noticing the inquiry and extracts in the January number of the *Maryland Farmer*, page 13 and 14, relative to the subject on which the heading of this article portends, I would say to "A Pennsylvanian," that in this latitude our farmers plant the main crop of corn the last week in the month of April or when the soil is sufficiently warm and dry, and pumpkin seed three weeks thereafter, thus keeping the vines back till after the first working of the corn crop. When pumpkins are grown with corn (a fallacy by the way, I believe,) the land ought to be made extra rich, the hills not less than twenty feet apart, and two plants only allowed to stand in each hill, otherwise the land would be too much shaded, heat and air excluded and the product of corn seriously reduced. Better plant these two crops separate, the pumpkin hills ten feet apart, three plants in a hill, cover the seed two inches deep with a small narrow breasted plow, followed by a roller. If planted with corn, cover with hoes. A profitable crop (if the fly is not seriously destructive) of Swedes, hybrid or yellow bullock turnips might be grown on the same ground, the former planted about the 25th of April and the latter sown six weeks later. Previous to planting coat the pumpkin seed with fish oil and roll the same in gypsum or dry unleached ashes; when the plants are up dust them with a bug antidote; the same precaution aptly applies to the squash, melons and cucumbers. A very good dusting recipe will be found on page 14 same number. Bridgeman says, "there is nothing that protects young crops of turnips, and other plants, from the depredations of the fly so well as rolling; for when the surface is rendered completely smooth, these insects are deprived of the harbor they would otherwise have under the small clods and small lumps of earth. If the land is well drained, no standing water and broad flat-hills formed, (a heavy fork full of rich compost incorporated) "Pennsylvanian" need not apprehend a failure. A good plan to keep the vines out of the wet is to run out two or more furrows east and west, thus forming furrows to retain moisture during a drought, and ridges to support the vines during a wet spell. Seed for the main crop of white or table turnips is sown about the first of August, half to one pound of seed per acre. If with corn sow after the last working. If a rain does not occur soon after seeding, cover with a fan shaped brush, a light angular harrow or roller.

The recent snow storm induced me to construct what I call an excavator or smoothing implement. It is made thus: two sled runners two inches thick, ten inches wide, six feet long, and the same length apart in the rear, bolted together in front, and covered with ¼ inch boards, the runners iron-plated, and the draught chain attached to the runners two feet back of the prow. It is a capital implement for clearing path and carriage ways from snow. Requires two hours for construction, and if home-made, (exclusive of lumber,) at a cost of $2. It is also a useful smoothing implement for breaking small clods and lumps of earth, covering turnip, clover and grass seed, hauling wood and stones, the conveyance of slaughtered hogs, and the platform a bearing for the scraping process. I value it as the most useful implement I possess. For the Eastern States it will be necessary, I suppose, that the runners be made twenty inches wide, and two quarter-circular iron braces bolted to the runners and platform, for the purpose of preventing the runners from caving inward.

All other vegetable seeds (except, if you please, Lima beans, large yellow turnips, and late potatoes,) ought to be planted in separate departments, allowing but two Lima bean vines to each hill of corn; the seed should not be planted till the corn plants are fairly started.

Article No. 2, on the same subject, by E. F. De Long appears to be practical, and which I freely endorse.

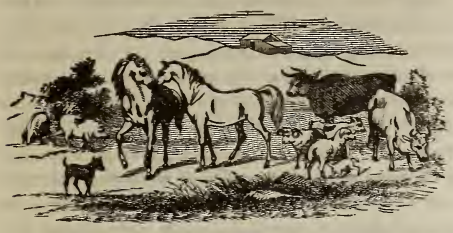
As regards a correspondent writing to the *Cincinnati Gazette*, I cannot account for his success other than the pumpkin seed was planted wide apart, the land very rich, and not seriously wet. It appears superfluous to notice articles No. 4 and 5, the substance of what I would say being embodied in the aforegoing remarks.

Baltimore county, Md. PLOWMAN.

BE DOING SOMETHING.—We have frequently seen farmers, says the *Germantown Telegraph*, and especially those denominated "city farmers," passing over their premises, glancing about at one object and another, looking wearied, just because they had nothing to employ their time. Now, if they were to provide themselves with a weed-eradicator, a little hoe, with the blade straightened out, intended to *push* into the weeds, instead of striking a perpendicular blow, and having a good long handle to save the back, they would find an agreeable employment in punching out noxious vegetation as they pass along. The implement will also answer for a walking cane, and can be used for several useful purposes. We have seen many an old farmer, whose active labors were over, employ and enjoy themselves in this useful way.

The moss trade is becoming quite a consideration in Florida exports. Nineteen bales were shipped to New York from Palatka, last week.

Live Stock Register.



TEETH OF THE SHEEP.

We give from Randall's famous "Sheep Book" the following information relative to the "Teeth of the Sheep," by which their *age* is positively proved This information is all-important to sheep-men particularly those who are *now in the business:*

The sheep has thirty-two teeth—eight incisors in front of lower jaw, and six molars on each side in the upper or lower jaw. The lamb at birth has two incisor teeth visible, or pressing through the gums. Usually before it is a month old it has eight comparatively short, narrow ones. At abont a year old, though sometimes not until the fourteenth or sixteenth month, the two central "lamb teeth" are shed and replaced by two "broad teeth," which gradually attain their full size. The sheep is then termed a yearling, or "yearling past." Two lamb teeth continue to be shed annually and are replaced by broad teeth, until the sheep has eight incisors of the second growth, when it is termed "full-mouthed."

The teeth afford the most decisive test there is of the age of a sheep until it is four years old, though there is sometimes a variation of a number of months or even a year in their development. High-kept and rapidly-grown sheep acquire their second teeth earlier.

When perfect, the incisors are sharp, rounded on the edge, as in the cuts, a little concave without and convex within (or gouge shaped;) and they project forward, so that with the firm, elastic pad on the upper jaw with which it is brought into contact, they are capable of taking up the smallest body. They will not only crop the shortest grasses, but scoop up its very roots. A sheep yarded on unpulled turnips usually scoops out the centers of them so far as they are in the ground, leaving little more than the mere skin of the sides and bottoms remaining unbroken like cups in the soil.

At six years old the incisors of the Merino begin to diminish in breadth and lose their fan-like shape and position. At seven they become long and narrow, stand about perpendicular with respect to each other, and have lost their rounded, cutting edges. At eight they are still narrower, and their outer ends begins to converge considerably toward the middle. At nine the convergence is still greater, the teeth are not thicker than very small straws, and are very long, particularly the middle ones. At ten these appearances have increased and the teeth are becoming quite loose. At about this period of life the teeth begin to drop out, though frequently are retained until twelve.* The sheep is then called "broken-mouthed." In two or three years after beginning to lose them, all the incisors are usually gone but one or two. These should be pulled by a pair of nippers, as they prevent the sheep from cropping short grass † The gum of the lower jaw hardens after their removal, so that it becomes in a measure, a substitute for the lost incisors, in *separating* their food. The molars, though shortened and worn, are never shed, so that *mastication* continues complete. Old breeding ewes often live, thrive, and raise good lambs three or four years after ceasing to have any front teeth.

English sheep become broken-mouthed from three or four years earlier—the difference about corresponding with the difference in the longevity of the races. Sheep of all kinds differ not only as between individuals, but between flocks in the period of losing their teeth. If fed *uncut* and dirty roots, they lose them much earlier. The *prying* action of the incisors, as they are employed in scooping out a turnip, for example—particularly if it be partly frozen—or the obstruction of a bit of gravel (which often finds its way from the tap roots even among *cut* turnips) between an incisor and the pad above, it not unfrequently causes a loose one to be detached, or a comparatively firm one to snap off.

Rye for Milch Cows.—A foreign paper says: When rye is of good quality, it certainly constitutes an excellent food for all kinds of stock.—Dairy cows fed daily on five lbs. of rye meal, and a sufficiency of cut straw, have been found to yield very large quantities of milk. In Holland, which is famous for its excellent butter, rye is a common food for milch cows; and, indeed, generally throughout northern and central Europe there exists as great a prejudice in favor of rye as a cattle food, as there is a prejudice against it in these countries.

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*It is stated by Dillion, in his Travels in Spain, 1779, (quoted by Youatt) that "the teeth of the Spanish ram do not fall out until the animal is eight years old; whereas the ewes, from the delicacy of their frame, or from other causes, lose theirs at five." These are undoubtedly loose assertions of a traveler; at least, they do not approximate to accuracy in respect to the American Merino.

†Mr. Youatt is clearly mistaken, however, in saying "that if any of the teeth are loose they should be extracted," (*vide* p. 5.) *All* the incisors are frequently loose, to a considerable degree a year or two before any of them drop out, and the sheep remains capable not only of cropping grass, but of scooping ou a turnip in the manner already mentioned. Nor should all be pulled when only one or two drop out. The judgment of the shepherd must be his guide in the matter; but as long as five incisors remain together or press together, it is not usually best to remove them.

USEFUL RECIPES.

Collar Galls or Bruises.—In the first place, the collar should be kept thoroughly oiled where it comes in contact with the neck. The swelling should be thoroughly washed with warm water, and then bathed with a lotion composd of one drachm of tincture of arnica in half a pint of warm water, used every day. If the shoulder is badly bruised, it will be well to rest the animal from work in harness, and apply a wash every day till cured, compsed of sal. ammoniac, one ounce; vinegar, four ounces; spirits of wine, two ounces; tincture of arnica, two drachms; water, one half pint, mixed well. Perhaps you might dispense with the collar, and use a breast strap instead, if the horse must work.

Hog Cholera.—Dissolve thoroughly one pound of copperas in three gallons of warm water, and apply the wash about milk warm to the affected animal, by dipping into the solution or rubbing upon it until the skin is thoroughly wet. Whenever the skin of the hog begins to look rough and scaly or of a dark red color, apply the wash immediately. Don't wait until the more alarming symptoms (vomiting and purging) set it. Apply the wash every day until the scales are removed. A correspondent states that this remedy has been tried repeatedly, and without a single failure when the directions were properly followed. At any rate it is worthy of a trial.

Sows Eating Pigs.—Young sows will sometimes eat their offspring, from costiveness, which may be prevented by feeding some laxative food, and rubbing the backs of the pigs with an infusion of aloes; or raw salt pork, given to the mother, will prevent her from eating her pigs. It has been given to them with success after they had eaten one or two pigs.

Signs of Pregnacy.—The following are trustworthy signs of pregnacy in cows. 1. Absence of desire for the bull at the regular period. 2. The filling and pendant position of the abdomen. 3. The movements of the calf, seen in the right flank, especially after a drink of cold water. 4. When the closed fist is punched into the right flank suddenly, and held for a few seconds, the calf is at first repelled, and as it floats back in the surrounding liquid, it is felt to strike against the knuckles. 5. Application of the ear over the right flank, will often detect the beating of the calf's heart. 6. A careful examination with the hand in the rectum, made by some one acquainted with the parts, will give positive indications.

Cold in the Breast.—Many of our best teamsters protect the breast of their horses by a piece of cloth about two feet square, hanging down from the lower end of the collar. This is an excellent practice in cold weather, as the most important part of the animal is constantly sheltered from the cold wind, especially when traveling towards a strong current. The forward end of horse blankets should be made as closely around the breast of the horse as our garments fit our bodies.

Wens on Cattle.—Mix equal quantities of spirits of turpentine and sulphuric acid, stirring slowly in a tumbler—afterwards bottle the mixture. Rub grease round the base of the wen and then apply the medicine to the wen with a feather once or twice a day; it will gradually eat them off.

Remedy for Scours in Cattle.—Take soft soap, molasses and sweet milk: give dose according to age.

THE POTOMAC LANDS.

The central location of the lands of Northeastern Virginia, the wonderful facilities afforded for water communication with the principal cities, their climatic advantages in fruit-growing through the modifying influences of large bodies of deep water, and the variety found in the soil itself, contribute materially to a true estimate of their intrinsic value, which will only become fully apparent when improvement shall have unfolded something of their real capabilities. The abundance of sea-weed on the shores, the plentiful supply of material for home-made fiish-guano, the cheapness of oyster-shell lime, and the underlying marl so accessible through all this region, offer fertilizers in great variety and practically unlimited quantity, precluding the necessity of the more costly commercial fertilizers, and enabling the farmer to increase at will the fertility of his lands.

People begin to think that it may be poor economy to grow corn at ten cents per bushel on cheap western lands—say eighty bushels for $8—when lands might be had at $30 to $50 per acre, in some places for $10 to $20, that will produce fifty bushels, worth $40. The soil is generally a loam; in some places a sandy loam of fine texture and full of organic matter; in others, a clay loam, retentive of moisture and of manure. It is a light, quick soil, which literally shoots into perfection all sorts of products. The climate is propitious, giving earlier results by from two to four weeks than Delaware and New Jersey. This fact, connected with that of remarkable facilities for cheap and rapid communication to Baltimore and the more Northern cities, makes this region the paradise of "truck" growers. The same cheapness of transportation gives value to the timber, much of which is heavy, making cord-wood, formerly a drug not worth marketing, a valuable commodity.

We refer to a record of a visit once made to a tract which may be taken as a sample of these Potomac lands:

Very little expense has been incurred for fertilizers. Twenty bushels per acre of cheap gas lime had been spread upon the grass land, and the crop is evidently fairly estimated at two and a half tons per acre. The corn was planted late, but its germination and growth have been marvelous. The soil is a fine clay loam, in some places with more of silex, never stiff and heavy, and never inclining to "bake" under the influence of heavy rains and hot sun. A little further on, on the lightest soil to be found, are peach trees, put out four years ago, large enough for six years growth, perfectly healthy and vigorous, and full of fruit. In the distant wood is one of those blemishes upon Virginia agriculture, an old field, exhausted and abondoned. Examination reveals the fact that the exhaustion is skin deep; the surface had been scratched over, in former years, and spitefully turned out to grass and weeds, upon

refusal to yield undiminished returns with so negligent culture. The soil immediately below the surface has long been unstirred. It contains in a fair degree the elements of fertility, and the subsoil differs little in appearance, being a little more crude, uninfluenced as it is by air and frost. An inch or two deeper plowing, and a little lime to correct its acidity, would make it comparatively a productive soil, and a green manuring of clover would make it better still. For fruit, sweet potatoes, melons, and market gardening generally, it would produce largely. For grass it is scarcely surpassed, in quantity or quality. Wheat yields a valuable crop, and corn grows luxuriantly.

The following letter from Mr. Chalkley Gillingham, of Accotink, Virginia, a pioneer in the developement of the capabilities of these soils, in a colony upon a part of the original estate of General Washington, in the vicinity of Mount Vernon, gives a brief statement of the results of that enterprise:

In the latter part of the year 1846, four or five others besides myself purchased the "Woodlawn" estate, (a part of the original Mount Vernon) then a neglected estate of 2,000 acres. There was not one white person upon it. Our intention was to form a settlement of people alike in habits and sentiments. Others were expecting to join us in the experiment. The first thing we did after the purchase was to come down to the property and bring a surveyor with us, and we laid off the whole into lots of 50 to 150 acres each. There was a very large substantial brick mansion-house on the premises, tenantless. We set off 400 acres with the mansion-house, the balance in small tracts; half of the whole estate was in timber. We introduced farmers, mechanics, and laborers. Four of us joined together in copartnership, built a large saw-mill, and repaired an old flour-mill on an adjoining property, which we bought within the first year, and commenced sawing up the timber and grinding grain. The timber went to Philadelphia, Bath, Maine, and other places; the flour, after supplying the colony, went to Alexandria and Washington, and the North. Our mills were at the mouth of Accotink Creek, at tide-water, where vessels could load at the mill. A few of the other members of the colony took small farms to themselves; the remainder of the land for the time being was worked and improved by the four who were associated together and who were owners of the main part of the estate, from which lots were sold off as fast as settlers came in; the whole estate is now worked in small farms. The 400 acres left with the mansion-house is now divided into five or six lots or farms. We commenced our farming improvements by moderately deep plowing, thoroughly done, using guano freely as a fertilizer to commence with, in order to get straw and other vegetable matter with which to make other fertilizing materials to follow. But we find lime to be the cheapest and most enduring fertilizer we can employ, after getting vegetable matter into the soil. Our general farming is a rotation of corn, potatoes, or oats, and wheat, then grass, which latter, with corn, are the principal crops. We have considerable lands devoted to small fruits and orchards and nursery, which we find more profitable hereaway than general farming. While a crop of wheat will only yield 15 to 30 bushels to the acre, worth $1 to $1 50 per bushel, or $30 to $40 per acre, a crop of strawberries, or other small fruits, will yield from $100 to $250 per acre. Orcharding I consider to be profitable. We have many hundred apple and peach trees. The apple orchards are most of them too young to show what is the best they can do, but, from our experience thus far, I believe apple-raising will be quite remunerative. The fruit in most instances is very fine. I have examined, studied, and experimented much the past twenty-five years to ascertain the kinds best adapted to our climate, soil, and other circumstances, and think I have succeeded with a list sufficiently large for all practical purposes. The people of this region have been heretofore misled, particularly with winter or long-keeping varieties, having obtained their trees from the North and planted such varieties as are popular there, (and the fruit from which they have eaten here imported from there,) which has proved a failure when grown here. We find varieties originating here and south of us to be the proper varieties for long keeping; we therefore obtain such varieties from trees originating here, and in North and South Carolina and Georgia, such as the Abram, Milam, Limbertwig, Rawie's Janet, Prior's Red, Meade's Keeper, and Boiling's Sweet, of Virginia; the Wine Sop and York Imperial, of Pennsylvania, have an equally high meed of praise; the Cullasaga of South Carolina, and several other of less note, and still less known, of North Carolina and Georgia. Last, not least, is pear culture, which succeeds most admirably in our soil and climate; and the old varieties, which seem to have run out as by exhaustion in more Northern latitudes, succeed here to admiration. I will give you a list of such as I find to be very desirable, viz: Bartlett, Seekel, White Doyenne, (Butter, Virgalieu, St. Michael's of the North,) Duchess d'Angouleme, Louise Bonne de Jersey, Flemish Beauty, Buerre de Anjou, and many others of nearly the same claims for superiority.—*January Report of Agricultural Dept.*

The Value of Gas Lime.

As an application to land gas lime is of very doubtful value—at least this is the opinion of some of our best farmers. It is true some declare that they have found it beneficial, but most others condemn it as worthless. We do not exactly agree with either. In some cases we believe it to produce a very good effect; but as a general thing it does not show wherein it possesses virtue. It has been known to injure crops when applied so as to come directly in contact with the growing plant. We therefore cannot advise its use to a correspondent who has inquired of us in relation to it.

Better resort to *lime* at once, if it can be obtained at a reasonable price, and the land neeeds an application of it. As to the quantity per acre farmers differ very much, and no doubt rightly differ. The condition of some land may require 150 bushels to the acre, while other land will require not over 50, or even thirty bushels From 75 to 100 bushels will suit most soils, and this is the quantity generally recommended by experienced farmers. We therefore say, use the genuine article, only. It is the cheapest in the end, always safe, and always valuable.—*Germantown Telegraph.*

TOBACCO CULTURE IN CALIFORNIA.

Interesting Facts Regarding the Raising and Curing of Tobacco—An Improved Process in Curing—Tobacco Raised in Santa Clara Valley which Equals that Imported from Havana

For years, and, indeed, ever since the first efforts at tobacco culture in the United States, endeavors have been made to raise and cure tobacco so that it would be equal in flavor to that imported from Havana. All efforts of this kind have heretofore failed. The best cigar tobacco raised in the United States is the Connecticut seed leaf. Pennsylvania, Ohio, New York and Wisconsin, during the last few years, have raised a fine quality of cigar tobacco, but somewhat inferior to the Connecticut seed leaf. No cigar manufacturer will use any American tobacco other than the Connecticut seed leaf if he can get it. In this market, at the present time, it commands 35 to 60 cents per pound. Yet so far inferior is it to that imported from Havana, that the latter commands from $1 12½ to $2 per pound. The duty, freight and insurance on tobacco imported from Cuba, aggregate about 50 cents per pound.

To give an idea of the extent of the tobacco business, it is estimatad that there are 72,000,000 cigars manufactured annually on this coast, the greater portion of which are made in this city.—Those cigars are worth, at manufacturers' price, $2 350,000. This includes those made from imported leaf.

There are used on this coast, in the manufacture of cigars, about 1,800,000 pounds of tobacco annually, including about 500,000 pounds of Havana. From this it will be seen that the inducement is great for tobacco raisers to supplant the Havana article by home product.

THE OBJECT ATTAINED.

J. D. Culp, of Gilroy, claims to have discovered a method of curing tobacco, by which, if properly grown, it is made equal in every respect to the best Havana leaf. Mr. Culp had experience before coming to this coast, in the Eastern and Western States, in the culture of tobacco, and added his experiments to those of others in endeavoring to attain the coveted success. Learning of the peculiar advantages of the California soil and climate, in 1859, twelve years ago, he came to this coast, and fixed upon Santa Clara Valley as the location of his future endeavors. Ever since that time he has devoted his sole attention to tobacco culture, making constant experiments in the curing of his product so that it would rival that imported from Havana. He procured the best of seed from Cuba, and was able to raise the finest quality of leaf; but the process of curing persistently brought out an article unlike that desired. Confident that the fault lay not in the seed, the soil or the climate, and confident that the natural leaf, if cured properly, would be all that was desired, he continued to experiment in the curing process. He now claims to have succeeded. He claims to have thoroughly tested his newly discovered process by two years of practice. He has shown to all the principal cigar manufacturers and dealers in this city samples of his tobacco so cured, and it is universally pronounced to have "all the appearance and qualities of fine Havana tobacco." The writer of this article has been shown a certificate to that effect, signed by the twenty-four leading importing and manufacturing houses. He has also conversed with members of several of the firms, and finds the expression universal that when first told that tobacco could be raised and cured on this coast so that it would equal Havana, they scouted the idea, but on seeing samples, they were convinced that such was the case. They all pronounce the samples exhibited by Mr. Culp to be equal to good Havana "filler" in everything except age. One prominent importer says he can take Mr. Culp's tobacco out of the country and return it in Havana "shocks" and the best judges in the market cannot distinguish it from the best Havana filler.

WHAT THIS COAST CAN DO.

Mr. Culp has now on hand 8,000 pounds of tobacco so cured. He claims that this coast can raise its own tobacco and make its own cigars, so that the 72,000 000 of cigars now manufactured and worth at wholesale $2,300 000, will be produced at a saving of fifty per cent., besides keeping the money in the country. He claims that he can raise 1,500 pounds per acre, and cure it in such a manner that it will be fully equal to that imported from Havana. Up to this time his endeavors have been somewhat limited, from lack of means, but he has within a few days past secured the cooperation of ample capital, and proposes to go into the business on a large scale. He is now on his way East for a quantity of selected seed, and will this year plant three or four times the acreage that he has heretofore been able to. He will immediately erect sweating and curing houses on the most improved style. He says there is more money in tobacco culture than in any other branch of agriculture.

MANURES—THE TOBACCO WORM.

This coast has this advantage over Connecticut in raising tobacco; in Connecticut it is estimated that $62 per acre is annually expended on an average throughout the State for manure, and $15 per acre to kill the tobacco worm. Mr. Culp has raised twelve successive crops of tobacco on his ranch near Gilroy, on one piece of land, without the aid of manure, and the last crop was fully equal to the first. The land shows no signs of deteriorating. Neither has he been troubled with tobacco worm, the wasps having killed them as fast as they appeared. He has never spent a cent for the destruction of the worm. On the Island of Cuba they expend more money for manures than they do in Connecticut.

PLUG TOBACCO IN CALIFORNIA.

Nor is cigar tobacco the only kind that can be advantageously raised on this coast. While Santa Clara Valley, so far as experiments up to this time show, is superior to other portions of the State for the culture of cigar tobacco, Napa, Sonoma and Russian River country, excel in plug tobacco.

To illustrate this: Some years ago, before the railroad was completed, the market became quite bare of light plug. A leading importing house conceived the idea that a substitute could be improvised from the California product, and a judge of the article was sent into the Napa, Sonoma and Russian River sections. He bought up the choice of the stock which the farmers had roised, and it was manufactured by the firm into plug, and proved to be a superior article. A fancy name was given to it, and it was sold for the best Virginia; no one doubting for a moment that it was not the

choicest of the James River bottom crop. Of course, the stock so purchased soon became exhausted, but the new brand had established itself in the favor of customers, and the firm had so many orders for it that they were compelled to continue to sell it, placing the brand on choice Virginia plug. It is on the market to this day; but the article which first established its reputation has never been duplicated from California product. This may seem somewhat strange, when the fact that farmers can obtain 12½ cents per pound for all they can raise, is considered. At that figure, it is a far more lucrative product than is wheat. But wheat is more easily grown, and, bseides, the experience of the farmers thus far, in the sale of their products has been rather unfavorable. The amount raised has been so small no regular demand has existed, and the producer oftentimes has been compelled to hold his crop for a year or two before he was able to realize. From this time, however, this interest seems destined to move under a new impetus.

THE TOBACCO CLIMATE.

Regarding the climate necessary for cigar tobacco there are some curious facts of interest. The different grades of tobacco grown on different portions of the Island of Cuba vary greatly in quality. The crop grown on the north side is the only superior article. Seed taken from the north side and planted on the south side of the Island produces at the very first crop an article inferior to the Connecticut product. The difference does not seem to be so much in the soil as in the climate and the prevailing trade winds. Persons in this city who have been familiar with tobacco culture in Cuba, assert that the temperature and the prevailing trade winds of that portion of Santa Clara Valley near Gilroy bear a very close resemblance to those of the north side of Cuba. To this they attribute the close resemblance of the crop to that from Cuba.

Mr. Culp claims that the Havana seed does not deteriorate when reproduced; but, on the contrary, his choicest product is raised from seed which is the offspring, several generations in distance, of imported seed. He has also on hand a large quantity of Connecticut seed leaf of his own culture.

Many other sections of the State are adapted to tobacco culture, and other portions may be found as favorable to the production of cigar leaf as Santa Clara Valley. There is much land in the Southern Counties, and in the Kern river country, that is admirably adapted to this profitable branch of agriculture. It is a far more sure and a far more lucrative crop than wheat; and if California and Oregon farmers once realize the advantages of the crop, there is no doubt that they will make it one of the staple products of the coast. If we can realize the advantages claimed, an impetus will be given to an industry that will add greatly to our wealth; for we will not stop at supplying our own demands, but will ship largely to the East, and in great measure supplant the imported article. Indeed, the market is such at the present time that it will pay better to ship a good article to New York than to place it on this market. In a few years California tobacco can attain as high a reputation abroad as has California wheat or California fruit. Nor is there any reason why the Pacific coast should stop at supplying the Eastern States, for she has enough breadth of good tobacco land to enable her to supply the world.—*California Evening Bulletin.*

2

PIG BREEDING AND FEEDING.

Mr. Mechi, the prince of experimental farmers, says the same rule applies to pigs as well as to other animals; choose the best male parent of a thrifty breed. Let the breeding sow work for her living, for if you feed her bountifully she will get fat and have few pigs. But he says, to have good pigs, she must have the right sort of food to make bone, muscle and fat; but avoid the fatal mistake of giving the sow a large quantity of roots before parturition. Let her run in pasture, and have a moderate supply of bran, a little meal and boiled potatoes, a few turnips, but very few mangolds; a moderate supply of peas, beans and barley, or soaked Indian corn may be added, also clover and green beans in the pods.

Nothing comes amiss to the sow. The great point is to give a variety, and not too much of one sort, especially roots. But after parturition roots may be more liberally given, especially cabbage in conjunction with other food, but immediately after parturition the diet should be sparing and cooling. In cold weather, warmth and shelter are indispensible. Never allow a pig to bury itself in stable manure, or catch cold by sleeping on the cold ground. For fattening pigs, nothing beats one-third pea-meal and two-thirds barley meal; if mixed with skimmed milk, steamed roots and potatoes, they grow and fatten very fast. He fattened two hundred pigs one season without losing any by disease. To promote ventilation they were all placed on sparred floors, and in hot weather they were treated daily with a shower bath, which kept them very clean. He put straw on the floors in cold weather, and he says pigs pay in manure better than most other animals. They should have salt and plenty of pure water.

Hardiness of Drilled Wheat.

The winter in our best wheat growing regions has thus far been quite open, exposing the crop to the effect of some alternate thawing and freezing, and bleak, sweeping winds. It is this sort of weather that is trying to the crop, and which, coming either in midwinter or spring does it more harm, in the aggregate, than anything else. We believe any observing and candid farmer will be convinced by careful examination that drilled wheat withstands this trying period much better than that sown broadcast. Especially is this so when the drill marks run north and south, so as to bring the little ridges of earth thrown up between the rows of wheat plants, in position to shield them from the worst effect of the prevailing winds. Laying close to the earth, with its roots running deep, and under these ridges and the crown sheltered by an earth bank comparatively as high as one of fifteen feet altitude would be to a man, the drilled wheat is safe when that sown broadcast is either destroyed completely or so crippled in its vital energies as to make but feeble after-growth. There may be reasons when wheat sown broadcast and harrowed in does as well as that drilled, but they are favorable years and exceptional circumstances. We believe in drilling winter grain for the *shelter* it affords both to the roots and crown of the plant, as well as for other good effects. In some cases where water is liable to stand on the field it is probably wise to run the drill furrows so they will serve as channels to convey it off.—*American Rural Home.*

THE
MARYLAND FARMER,
AT $1.50 PER ANNUM,
PUBLISHED THE 1ST OF EACH MONTH,
BY
S. SANDS MILLS & CO.
No. 145 WEST PRATT STREET,
Opposite Maltby House,
BALTIMORE.

S. SANDS MILLS, E. WHITMAN, } Publishers.

BALTIMORE, MARCH 1, 1872.

TERMS OF SUBSCRIPTION:

$1.50 per annum, in advance—6 copies for $7.50—10 copies $12.00.

TERMS OF ADVERTISING.

1 Square of 10 lines or less, each insertion	$1 50
1 Page 12 months	120 00
1 " 6 "	75 00
¼ " 12 "	70 00
½ " 6 "	40 00
1 " Single insertion	20 00
Each subsequent insertion, not exceeding four	15 00
¼ Page, single insertion	12 00
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Cards of 10 lines, yearly, $12. Half yearly, $7.
Collections on yearly advertisements made quarterly, in advance.

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CALL FOR A STATE ROAD CONVENTION.

The people of the rural districts of Maryland, interested in securing good county roads, are requested to meet in council in Baltimore, on Thursday, March 28 h, at 10 o'clock, A. M , at Raine's Hall, corner of Baltimore street and Post Office avenue, to devise some means by which the great burden which retards the growth and development of the rural districts may be successfully removed.

The policy of holding a State Convention to discuss this important question has been agitated throughout the State during the past year, and has been universally concurred in as the only means of securing uniform and united action in the matter, and as it affects the interests of every farmer in Maryland, it is hoped every county in the State will be fully represented—either by delegates or voluntary action, as each county shall prefer, without further notice.

EMIGRATION TO MARYLAND.

The following is an extract from a private letter from an old and esteemed friend, now located in Brooklyn, New York, who resided sometime in Maryland, and having traveled through the South and in England, is thoroughly posted upon the subject of which he speaks. We shall be happy to hear from him at all times. He says:

"The *Farmer* comes to me promptly every month, for which I am truly obliged. I need not tell you how much I prized it, when in the State, as a most valuable means for developing the vast resources of the State, which I fear are but little appreciated by your people. My venture among you was most unfortunate and disastrous, ending from competence, in poverty; but still it has in nowise changed my opinion of its great advantages for a northern emigrant, even with the present condition of public sentiment.

Your people do not seem to realize the advantages or disadvantages necessarilyy attending emigration. Having been in England, and given the subject much thought after going South, I think I know whereof I speak. I believe I have *bored* you some on the subject. Indiscriminate emigration as now praticed for the West would be a most unmitigated curse to the South, as at present conditioned, with its population—better not have it. I see that you begin to comprehend the fact that successful emigration requires something more than an agent to write letters. and circulate hand-bills and circulars. The English people are the kind you want, but they are a peculiar people, and must be reached by peculiar means. I know them well; and I know that all attempts which have been made in the South were worse than useless, except to the pockets of the agents. I could have done more in one year than all the Southern agents have done in the last four years. I told them when in the South their plans would prove failures, but everybody seemed to know better than I did. I have seen more emigrants go West in the last year than all that have been got into the South in the last three years."

LOUDOUN COUNTY (VA) FARMERS' ASSOCIATION.—A call to the farmers of Loudoun county (Va ,) is signed by Amos Hughes, Levin T. Jones, J. E. Walker, J R Smith, H. R. Holmes, Phineas J. Nicholas and Thos. Phillips, for a meeting at Hamilton, on the 2d prox., to organize a Farmers' and Dairymen's Association, to establish a depot with an authorized agent for the sale of produce in the Washington and Alexandria markets.

BRONZE TURKEYS.—We have had several enquiries from subscribers in relation to bronze turkeys, where they can be procured, and at what price. We have made an effort to obtain the information, but without success. Can any of our readers give us the information through the columns of the "*Farmer ?*"

THE INFLUENCE OF FORESTS ON RAIN FALL.

The theory so often asserted that the cutting down of our forests is one of the causes of the long seasons of drought with which our farmers have to contend, and is also productive of the terrible freshets which suddenly devastate in the summer time the low lying lands on the borders of our inland rivers, has of late been denied in some quarters, and it is therefore necessary to state the arguments on both sides. That the destruction of timber in this country is immense, and often reckless, is admitted by all. We have had, what seemed to be, an inexhaustible supply which was the growth of countless ages, and which so long as the red man roamed over the wilderness suffered but little, except from occasional fires. Year by year, however, the vast stretches of forest have been silently and almost unobserved cut in upon, until it has been broken up into clumps, with arable farms between, except in the great forest area of the north and northwest, where the lumbermen are now actively at work.—Latterly the complaint of a scarcity of timber is beginning to be heard. In the Atlantic seaboard States the supply is confessedly limited—at the northwest, though still immense, it is yearly diminishing.

Thus far facts which are patent to all support the argument of those who are anxious for some protection against this waste of our forests. Those who go beyond this and say that drought, and consequent sterility follow the cutting down of our timber lands are met by the counter assertion of others, who contend that this drought theory yet requires proof from experience and a careful observance of meteorological laws. There can however be no doubt that the believers in a diminished rain fall, consequent upon the clearing of extensive tracts of forest land, have the best of the argument undoubtedly in this country since its settlement; the rivers have gradually shrunk in volume under water highways, like the Ohio and Mississippi are now at times but slender threads in summer time compared to what they once were and to what they become at seasons of high floods. They have in point of fact lost their old steadiness of volume and alternate now between stages of water so low as to render them difficult of navigation part of the year and dangerous at other times from sudden freshets.

The same results have been observed in Asia Minor, Northern Africa, Greece, and in various parts of Europe. As to Greece, a recent correspondent of one of our newspapers writing from Athens "cites the experience of the Greeks as a confirmation of the theory that a general destruction of forests is sure to result in drought and barrenness. In Greece the mountain sides which in ancient times were covered with dense forests now only present a rocky surface, the earth having all been washed away into the valleys below. Cutting away the trees, besides producing this barrenness on the hill-sides, was followed by long seasons of drought, from which the whole country has suffered and still suffers."

Formerly our forests, by the falling and rotting of their leaves, and by their shade and moisture, drew and retained the rains that descended upon them, rendered the rain falls more regular, and thus checked the recurrence of freshets; and when they did come prevented them by slow percolation from doing the damage that they now so frequently occasion. They thus acted in the two-fold capacity of reservoirs and irrigators, and the best of their beneficial action is found along the line of the new canal, which has been cut by Lesseps across the Isthmus of Suez. These results are thus described:

"A few years ago the whole region through which M. de Lessep's famous canal now passes hundreds of richly laden vessels, was a sterile desert—the rainfalls amounting often to less than an inch during the year. There were no trees to be seen far or near. When the energetic Frenchman began his gigantic enterprise, he at once directed thousands of trees to be planted in proper localities; they grew up, thanks to careful irrigation, and now the astonished eye of the traveller beholds blooming prairies and stately forests where once all was waste and wild desert. But a still greater change has come over the climate; rain falls now frequently and abundantly, and the soil produces richly."

Nothing in our opinion can be more conclusive. It is practical philosophy in action, and the advantages of masses of foliage in the attraction of rain clouds has thus been fairly proven by experience.

Cultivating Ground-Nuts.—Out in northern N. York, it is stated in one of the New York rural journals, that ground-nuts have been cultivated. That is, there was a good crop of large, fine-looking nuts, and all that was needed to make them "most palatable" was a "little roasting." We guess when they come to eat them there will be a little disappointment about. This nut can be raised easily enough here, or New York, and elsewhere in the east, north and northwest, but they are worthless. They are larger and finer-looking than the southern growth, but when they are cracked there is—*little or nothing in them.* We have tried to cultivate them repeatedly, and always with this result. —*Germantown Telegraph.*

Killing Crows.—Hundreds of crows, says the *Cumberland News*, are being killed in the woods near Martinsburg, by boys with clubs. Some singular disease seems to afflict the crow family, and hundreds of them are to be found flapping and hopping about on the ground nearly blind.

Our Agricultural Calendar.

FARM WORK FOR MARCH.

We have now fairly entered upon that season in which the work of the farm commences in serious earnest. Protracted as the winter has been, and in some respects unusually rigorous, the sun, in spite of the cold northwestern winds, loaded with the damp air of the tremendous snows on the line of the Pacific railroad, is gradually gaining its power and it may be that March will bring with it a loosened soil, and for part of the month at least, balmy airs. At all events it is necessary to be prepared for vigorous work, and the more so if it should so happen that the spring should be cold and backward. It is the peculiarity of our climate that our spring is sometimes short, and that the work on the farm has to be pressed forward under disadvantages before the ardent heats of the summer come on. The earlier spring crops, oats for instance, thrive best if they can be started in cool, moist weather, the vigor of growth being sensibly checked and the yield considerably reduced if the plants encounter the summer heat and dry weather in their earlier stages. Every fair spring day is therefore of consequence, and the earlier oats are seeded after the frost is out of the ground, the greater will be the product, if the soil is adapted to them, and the season prove favorable. But an early spring is of importance in other respects, as it offers more opportunities for thorough preparation for the corn crop, and makes the general operations of the farm easier. The work for the month may be set down as follows:

Oats.--The Soil and Preparation.

A rich, heavy loam, inclining to clay rather than to sand, is the soil best adapted to the production of oats. Old meadows, well drained and newly broken up, will almost invariably produce the largest yield, by reason of the potash and phosphates in the rotting roots and sward. A glance at the composition of the oat, both of its grain and straw, will show why these constituents are essential to the vigorous growth of this cereal.

Analysis of the ashes of the grain and straw of the oat show that it contains the following elementary substances:

	GRAIN.	STRAW.
Potash	12.09	24.05
Soda	0.00	4.04
Lime	3.07	8.03
Magnesia	7.07	2.08
Phosphoric Acid	14.09	3.00
Sulphuric Acid	1.00	4 00
Silica	53.03	40 00
Chlorine	0.05	4.07
Iron, Carbonic Acid and Loss	6.00	8 03
	100.00	100.00

The fifty per cent. of silica indicates why well rotted sward land is so favorable to the growth of oats. The silica in the swards and roots of the grasses is in a soluble state, and is easily taken up whilst there is also on a heavy sward abundance of potash and the phosphates to perfect the grain.—Two ingredients, therefore, are essential to the perfect growth of the oat, where sward land is not available, and these are wood ashes and bone earth, or failing these, potash and phosphate of lime, in due proportions, and rendered soluble as they ought to be in the best commercial fertilizers.

Compost for Oats.—On land that has been partially exhausted by frequent cropping, the ingredients necessary for an acre of oats may be supplied by either of the following mixtures:

No. 1.—5 two-horse loads of barn-yard manure; 10 two-horse loads of wood's earth or marsh muck; 5 bushels of unleached wood ashes; 1 bushel of bone dust; 1 bushel of plaster; composted.

No. 2.—5 bushels of bone dust, or its equivalent of phosphate of lime; 10 bushels of wood ashes; 2 bushels of refuse salt; 1 bushel of plaster; mixed and spread.

No. 3.—250 lbs. of super-phosphate of lime, ammoniated; 10 bushels of wood ashes; 1 bushel of refuse salt; mixed and spread.

Time of Sowing.—We repeat: the earlier the oats can be seeded after the frost is out of the ground, and the soil is in condition to receive them, the better will be the probable yield.

Quantity of Seed to the Acre.—Sow from two to three bushels to the acre, according to the quality of the land. Spread broadcast and harrow in.—Grass seed may then follow immediately. They should be bushed or lightly harrowed in, and the work finished off with the roller.

Sowing Clover Seed.

If the clover seed to be sown on winter grain was not seeded on the snow in February, as may sometimes be done to advantage, let the seeding be done as early in March as possible. It is a good practice to harrow in with a light harrow, and follow immediately with the roller. Where this cannot be done the seed has to take its chances, and more seed is required.

Quantity of Clover Seed to the Acre.—Not less than a peck of clover seed should be used if the clover is to be seeded alone, and indeed if orchard grass is also to be seeded in the same ground, a peck of clover seed will not be found too much. The quantity of orchard grass usually seeded to the acre is a bushel. On good soil it is too little, as it is apt to grow in bunches, instead of forming a close mat, as it ought to do as the clover dies out. At least half a bushel extra could be used to advantage, and it is best to moisten the seed before broadcast-

ing it, but the seeding should then be done in damp weather.

Plastering Clover Fields.—Fields that are already set in clover, should have a bushel of plaster to each acre now scattered over them.

Preparations for Corn.

As soon as the oats are in, prepare at once for corn, by hauling out the manure from the barn-yard, spreading, and following at once with the plough. The practice of dropping manure into heaps, and leaving it there to be leached by rains, or dried by wind and sun, is a vicious one. The best mode, even if the hauling has to be delayed in consequence, is to haul out and spread just as fast as the plough can cover, and no faster. But this implies the use of extra teams, and these are not always to be had, in view of the ploughing to be done.

As to Soil.—Corn succeeds best of all on rich alluvials, next on sandy loams and loams of good quality; worst of all on clays, unless these have been broken down by fall ploughing, and have become disintegrated by winter frost. Good meadow land, with a due proportion of sand in the texture of the soil, manured heavily, deeply ploughed early in the season, and well harrowed lengthwise of the furrows, will in favorable seasons bring a heavy crop of corn; but the earlier cultivation must be shallow until the sward has had time to rot.

Barley.

Barley is rarely cultivated south of Mason & Dixon's Line. It flourishes better from Pennsylvania north to Canada. Still, if it should be determined to try a few acres, the soil should be a light, rich, dry, sandy loam, ploughed deep and well harrowed. The soil can scarcely be too dry at the time of seed ing. If a shower set in soon afterwards, the seed will speedily germinate, and when the plant is well up it will stand a drought better than any other cereal.

Quantity of Seed to the Acre.—Sow from two to two and a half bushels to the acre.

Stock, Cattle, Sheep, &c.

Milch cows, heifers, working animals and sheep, require special attention during this month. See *Maryland Farmer* for February.

Early Potatoes.

In the Middle States, and certainly south of Pennsylvania, the earliest planted potatoes generally yield the largest crops. The reason of this is that they need in the first stages of their growth coolness and moisture. Later plantings are also necessary, as the earlier potatoes, if kept too long in the soil, often take on a second growth. But in spite of this disadvantage it is well to plant early, and as a precaution, to plough deep and plant deep—six inches deeper than is customary. The two requisites of coolness and moisture are thus at least partially secured, and if a drought should come, the potato plants are better able to withstand it. But above all the soil must be made light and loose. Too light and loose it can scarcely be—and it must contain those constituents in which the potato delights—especially an ample supply of potash. If this is not in the soil it must be furnished by wood ashes, or by the potash of commerce. Lay off the furrows two feet and a half apart, and from eight to ten inches deep. In these spread well rotted manure and wood ashes. Cut the sets from large and well matured potatoes; sprinkle plaster over them, and plant as soon as possible thereafter. Some leave them in the barn to dry, and the practice would be a good one if they were not left there often so long that the sets shrivel, and a considerable part of the vitality of the eye is thus lost. When the plants come up, broadcast over them to each acre, four bushels of wood ashes, mixed with a bushel of air slacked lime. As soon as they are large enough run a harrow across the rows, or loosen the soil with a hoe, and then renew the soil about the vines. Keep at all times the soil light and loose, and keep down weeds, earthing up with the shovel plough from time to time.

Fences.

Examine these, and see that they are in proper repair.

Orchards.

All dead wood should have been trimmed out in February. If that was not done, let the work be done at once, and protect large wounds from the air by a mixture of cow manure and lime, or a coat of cheap varnish.

Planting Orchards, Shrubbery, &c.

The early part of this month new orchards may be set out, and shrubbery planted.

The American Historical Record.—We have received the first number of this monthly issued in January. It cannot fail to fill a very important gap in the literature of the day. It is proposed to make it a reliable repertory of historical facts of every kind concerning the Civil, Military, Political, Religious, Literary, Artistic, Scientific and Antiquarian affairs of our country. It contains a view of Annapolis in 1797. Published by Chase & Town, Fourth st., Philadelphia—price $3 per annum.

The Illustrated Annual of Phrenology and Physiognomy.—This valuable annual is received, and as usual contains a large amount of useful reading, worth surely 25 cents. S. R. Wells, editor, New York.

The Rural Alabamian.—A Southern magazine of Progressive Agriculture and Improved Industry. Published in Mobile, Ala., and edited by C. C. Langdon and J. Parish Stelle—at $2 a year. If the February number is a fair specimen of its future, we predict for it that success which it will surely deserve.

The Poultry World.—This is a new monthly devoted exclusively to Poultry, and must be acceptable to the fancier, family, and market Poulterer. Published by Van Benschoten, Stoddard & Lockwood, Hartford, Conn.—price $1 per year. It is gotten up in good style and ably edited.

Garden Work for March.

Garden Seeds.—Seed sown early in this month, should have the advantage of a warm border in the garden, well protected and having a southern aspect. The beds should be well dressed with thoroughly rotted manure, deeply spaded and raked fine. Now make drills six inches apart and half an inch deep, and sow the different varieties of seed required. For instance, early cabbage, cauliflower, broccoli, tomato, lettuce and radish. When the plants come up water them of an evening in dry weather, with a weak liquid manure made by putting a bushel of rich manure into a barrel, pouring water upon it and using the decoction thus made.

Early Peas.—As soon as the frost is out of the ground choose a warm part of the garden, and drill in a few more of early peas. Make the drills three feet apart and three inches deep. Sow the peas thickly along the drills, cover well, and press down the earth about them. When the peas are a few inches high, hoe them and support the young vines with sticks.

Plants in Frames.—See that these have abundance of air on warm days, to prevent the plants from spindling, and water freely with tepid water of evenings.

Bunch Beans.—A few rows of bunch Beans may now be planted.

Early Spinach.—Make the soil very rich with well rotted manure, spread it in deeply and rake thoroughly, and drill in a few rows of Spinach; placing the drills twelve inches apart, and the seed about an inch deep in the drill.

Carrots, Parsnips and Beets.—For an early supply of these, choose a warm part of the garden — The soil should be rich, but any manure cannot be used. Choose in preference a commercial fertilizer, such as ammoniated phosphate. The rows for carrots should be ten inches, and an inch deep—for parsnips twelve to fifteen inches apart, and on beets twenty to twenty-four inches apart. Cover the seeds with a rake, and press the soil firmly about them.

Small Salading.—Sow small salading at intervals, of a week apart throughout the month.

Celery.—Prepare a well protected border for the reception of celery seed for transplanting.

Siberian Kale.—Spade a small bed, manure it well, and sow siberian kale seed for sprouts.

Asparagus.—Clear up the old beds and fork in some well rotted manure, ashes and salt; new beds may also be set out early this month, or the seed may be sown.

Onion Seed.—Drill in onion seed early this month.

Red Peppers.—It is rather early for peppers, but the seed for the first supply may be sown in a warm border.

Early Potatoes.—Get these in as soon as the frost is out of the ground. For further information, see Farm Work in the present number.

Rhubarb or Pie Plant.—These plants may now be set out early in the month, or new beds made for raising rhubarb from the seed.

Gooseberries and Currants.—New plantations of these excellent fruits may now be set out. The bushes in bearing may also now be pruned, manured and dug about.

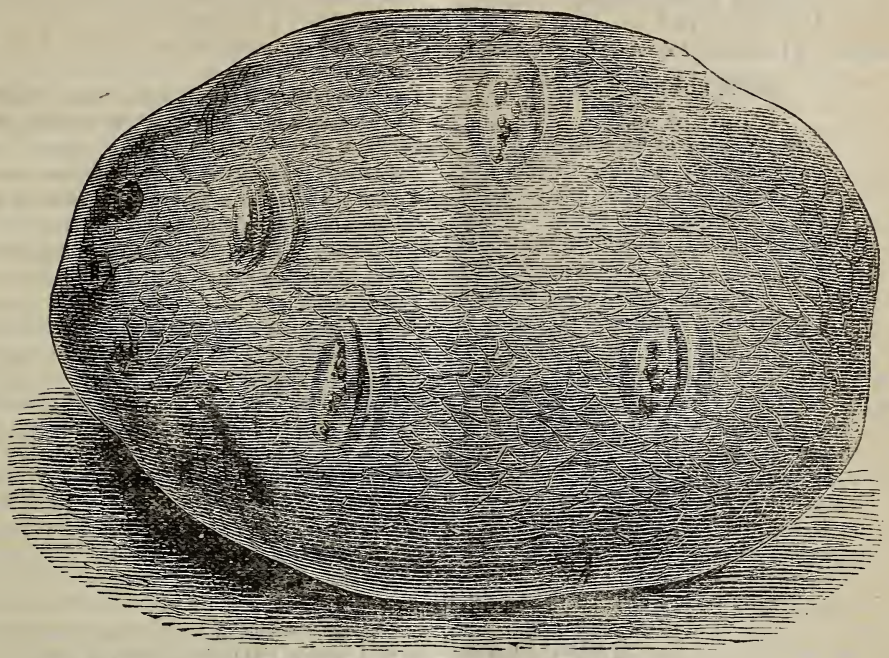
Raspberries.—Prune these, loosening the earth about the roots. Throw a shovelfull of well rotted manure around each, and tie up to the stakes.

Strawberries.—All strawberry beds demand immediate attention. They should be cleared of all weeds and refuse stuff; thinned out and dressed with well rotted manure—or what is better still, with wood's earth; spread between the rows either straw or tan, and sprinkle the bed with wood ashes. Water freely during the dry season, and even during the period of blossoming; taking care, however, that the watering is not done until after sunset.

GEN. WASHINGTON'S FARM.

The farm of Gen. Washington, at Mount Vernon, contained ten thousand acres of land in one body—equal to about fifteen square miles. It was divided into farms of convenient size, at the distance of two, three and five miles from the mansion house. He visited these farms every day, in pleasant weather, and was constantly engaged in making experiments for the improvement of agriculture.—Some idea of the extent of his farming operations may be formed from the following facts: In 1787 he had fiye hundred and eighty acres in grass; sowed six hundred bushels of oats; seven hundred acres with wheat—and as much more in corn, barley, potatoes, beans, peas, &c., and one hundred and fifty with turnips. His stock consisted of one hundred and forty horses; one hundred and twelve cows; two hundred and thirty-six working oxen, heifers, and steers, and five hundred sheep. He constantly employed two hundred and fifty hands, and kept twenty-four ploughs going during the whole year, when the earth and the state of the weather would permit. In 1780 he slaughtered one hundred and fifty hogs, for the use of his own family, and provisions for his negroes, for whose comfort he had great regard.

From C. W. Crossman, Rochester, New York, his Descriptive Catalogue and Guide to the Flower and Vegetable Garden for 1873.



THE PEERLESS POTATO.

THE PEERLESS POTATO.

Of the many so called new varieties of potatoes which the last four years have developed, we have seen none which seem to possess more claims to the attention of the farming community than the Peerless. Its greatest characteristics seems to be the great size which it attains and its great prolificness, whilst at the same time it is said to be unusually free from rot and disease, and the best eating potato of all the late varieties. We have heard of parties raising three to four hundred bushels to the acre, and were assured by one of our friends that he raised 786 bushels on 1½ acres, many of the tubers weighing over two pounds each. We have seen a sample at Messrs. E. Whitman & Sons which, though they were not so large as Pats', which were so "big that a bushel of them would fill a barrel," they were nevertheless of prodigious size. We think there is no question about these being the best variety for a main or general crop, though the soil in which they are grown doubtless has a great influence over their quality. We are indebted to R. H. Allen & Co. of New York for the above cut, and the following we extract from their catalogue, as to culture: "Plant in hills three and a half feet apart each way, putting two pieces of seed in each hill; or plant in drills three and a half feet apart, and the seed one foot apart in the drills. Give good culture, and keep all weeds from growing."

POTASH.

The use of this product in agriculture has been increasing rapidly during the past few years, and the article is becoming one of considerable commercial importance, while the natural supply is being developed in practically exhaustless quantities.—Vast deposits have been opened at the Stassfurth salt works in Germany, the magnitude of which may be inferred from the fact that at the present time more potash is being furnished from these mines—where, a dozen years ago, it was not supposed that a ton could be produced—than from the wood ash sources of the whole world, 30,000 tons of the muriate of potash having been manufactured there during the year 1870. The surface salts (which hold the potash) at these mines are capable of supplying millions of tons. It is probable that the salt mines of this country will be found, upon careful examination, to contain potash, and we may confidently look for the rapid cheapening of this useful product. The exports of ashes, pot and pearl, from the United States for the fiscal year 1870–71, were 13,169 hundred-weight, valued at $103 249; in 1869–70, 22,030 hundred-weight, valued at $256,339; and in 1868-69, 20,686 hundred-weight, valued at $161,731.

PEERLESS POTATOES.—A Pennsylvania correspondent of the *Rural New Yorker* writes a good word in favor of the Peerless. It sets but few tubers in a hill, all of which generally grow to good size.—They lie snug and close together, and are, therefore, easily dug.

JAKOBB DUNK PAPERS
ON
FACTS, FILOSOPHY AND FARMIN.

PAPER NUMBER VI.

ON ROADS.

The System of Repair.

In depicting the difficulties which the agricultural interest of our own and other States is compelled to encounter, it is not my intention to allude to these difficulties simply as proofs of our inattention to our interest, but to point out a remedy in every instance; and as the object sought is the elevation of the agricultural interest to the proud position it should invariably occupy—but does *not* occupy solely on account of the inattention referred to—I shall be happy to meet any gentleman who may differ from me, in courteous discussion of the question in the columns of the *Maryland Farmer*. Discussion is the channel of truth, and while the views humbly set forth in these articles may be susceptible of improvement, they are the best which the experience of the writer can suggest, but let us have an interchange of opinion that we may find out what the *truth* is. In regard to the remedy for the evil described in the November number of the *Maryland Farmer*—the depredations of dogs on sheep—a draft of a law designed to check the evil was placed in the hands of the gentleman who is now one of the most prominent members of the House of Delegates.

In discussing the Road question, it appears unnecessary to devote any words to the support of the necessity of their thorough repair; as remarked by the editor last month in his introduction to the correspondence upon this question—"good roads are the foundation of the highest forms of rural prosperity"—for wherever rural life exhibits the highest degree of culture and refinement, wherever the farmer gets the most money for the least work, the roads are best.

Wherever rural life, in its agricultural and social phases, wears the sterile badge of desolation; wherever the farmer works hardest on the poorest land for the least money, the roads are worst.

Is it a difficult matter to trace the connection?

The time for the holding of the Road Convention spoken of in my last was drawing near, when Jakobb and I accidentally met on the road to the landing.

"Goin' tu hold another Convention, hay?" asked Jakobb.

"That appears to be the general object," I replied.

"Tain't a jeneril thing, is it?" he added.

"No," I answered, "some people prefer grumbling at the bad condition of the roads to taking any steps for their improvement." Jakobb felt the "soft impeachment" slightly, for he replied:

"Hain't they had a lot o' conventions, and what hev they dun?"

"An immense amount of good by the agitation of the question," I returned.

"Hain't we rite where we wos ten years ago?" he asked.

(My last stated that the old law had been replaced by a new one, the new one repealed by a subsequent legislature, and the old one put back again.)

"We are," I replied, "but the very fact that a convention met to form a new law, indicated the existence of great objections to the old one, which objections are still valid against it, notwithstanding we have got it back again, and are where we were ten years ago."

Farmers lack the tenacity of purpose, which is the chief constituent of the thing called enterprise. If a meeting fails to accomplish the object for which it was convened, instead of removing the obstacles to their progress, and profiting by former experience, they are apt to conclude the difficulties insurmountable, and fall back into the ordinary pathway; whereas, our progress, *all* progress is marked by the trials of those who first essay a new passage, and success is attained by charting the 'dangerous' places, and trying again.

The vessel that flings out its colors amid the shout and music of welcome at its destined shore, is the one that pushes right along through storm and tempest, not the one that turns back into port.

If an agricultural society suspends operations from difficulties which would never disturb it again, it becomes almost impossible to revive it, and this apathy, or rather despondency, had taken hold of the people concerning the public road question, as intimated by Jakobb.

"But, what improvement," he asked, "can be made in the law we've got?"

"In the first place," I replied, "is the present law carried out; are all its provisions executed?"

"I hav'n't heard nobody complain o' that," said Jakobb.

"Does it give us good roads?" I asked.

"Not exaktly," said Jakobb.

"Then we want a change, and rather than submit to the evil, we had better keep changing until we get the right thing." I continued, "but one improvement I can suggest is the abandonment of a money tax, and the substitution of a labor tax."

"How you goin' to make good roads by that?" asked Jakobb.

"Instead of levying for money, let the people turn out and make up the road nearest their farms, and used most by them, and pay their road tax in that way."

"What!" said Jakobb, "drag a feller out on to the road, and make him fix it up?"

"The money is dragged out of your pocket now, and the roads continue bad;" I replied, "would it

not be better to secure good roads by the general labor of all the people on their own roads, than to continue to pay money out which does not secure the object for which it is levied?"

"Do you think they're got a right to take a feller away from his business that way, without his consent?" asked Jakobb.

"Do you think they had a right to take you away from your business without your consent, and make you do jury duty last spring?" I replied.

"I dunno," said Jakobb, "but they did it."

"They had a right to do it, Mr. Dunk," I continued, "the principle upon which the law appropriates a man's person or property, is that whenever possession or disposal of his time and property is inimical to the peace and welfare of society, or whenever that time and property are required for the general welfare, the law should step in and effect the change, the law being the written opinion of the majority of the people."

"But Joodge," urged Jakobb, on another phase of the subject, "jes think of the injustice to the laboring man, to take him away from his peaceful home and make him work like a mailfactor on the public roads!"

I had heard that expression before, and was not surprised to find it had reached Jakobb; opposition to wholesome legislation is generally ground down into a few stereotyped phrases, that have neither sense nor justice to recommend them; but resting on prejudice and party passion and ignorance, and self interest, generally pass current equally with the arguments which truth and reason, and advancement urge in defence of their high positions calculated to secure the elevation and improvement of the race.

In dealing with questions affecting the welfare of the people, however, it should be remembered that the greatest opposition will come from the vices of mankind. Ignorance is teachable. It has a deep reverence for knowledge, and the history of man is long record of his implicit confidence in a superior, wisdom, and when knowledge offers to ignorance the prospect of its advancement, it is ready to accept its terms, especially when it looks around and finds that the moral and intellectual worth of its vicinity is pledged to the movement; but when its prejudices and passions are aroused by some cunning schemer for his own advancement—even at the expense of the best interests of those whom they will degrade to the position of tools and stepping stones—it assumes the strong position of class opposition, and rather than imperil the peace of society by insisting upon the measure, the friends of progress withdraw it, hoping and praying for more auspicious circumstances, whilst demagogueism reaps its tainted harvest from the premises.

The position Jakobb assumed in this matter was like the one he took on the immigration question; he didn't want any more "furriners" here, because "wages would be so low an American would not be able to earn his salt." Jakobb is a farmer—a capitalist to a certain extent—a hiring man, and low wages would be to his interest, but he had conceived the wild idea that an "office" would help out the proceeds of his ill-farmed acres, and he was "in for it," principle or no principle, and he was fighting the labor-tax principle on the same ground, in doing which he argued against his own best interests and those of the community.

Low wages never followed the influx of immigrants; we are paying as much in Maryland for farm hands as when we obtained $3 a bushel for wheat, and $1.50 for corn. We receive just half those figures now, while it costs as much to raise them.

And the introduction of the labor-tax system would elevate all classes by the direct social and commercial influence of the good roads, which would succeed the adoption of the principle.

"Injustice to the laboring man, Mr. Dunk," I replied to Jakobb's remarks, "will you inform me where the injustice is?"

"Why, *he* ain't got no horse; he don't drive no wagon of his over the roads; he don't use 'em; he's got to go afoot; let them that rides around in their carriages fix up the roads if they want 'em any smoother."

"Mr. Dunk," I replied, "let us look at this matter fairly. I travel the roads afoot a great deal myself, and if only for the comfort of foot passengers, the roads should be made smooth and even.

"If the hireling has no horse or vehicle to-day, he may have one to-morrow; if we look around in this community we find that the wheel of fortune is constantly turning, and those who were hirelings a few years ago are now proprietors, and those who were living on their own land a short time ago, are now working the land of others; and a proper regard for the interests of all would direct legislation into a channel with which there could be no rational objection; and this is the grand beauty of just legislation; its benefits are felt by all classes in every state of their wordly prosperity.

"Those who are capitalists should strain every nerve to secure good roads for present use, and for future contingencies.

"Those who have only labor for their capital, and are working their way up in the world, should be equally anxious to secure good roads to facilitate their own passage up—and there's nothing like a smooth grade when you are at the foot of a hill—and to enjoy them when they get up."

"Oh, it all sounds very well," said Jakobb, "but

why not make them fellers that's got plenty of money tend to all these things?"

"Equal and exact justice to all requires the burdens of our state of society to be evenly distributed among all its members. The exemption of a class from burdens which it could easily and should justly bear, is class legislation, and begets class opposition, always injurious to the peace of society. Capital has drains enough upon its energies without subjecting it to an atom of unjust pressure; the modern tendency of the masses, including short-sighted trade unions, international associations, demagogues and politicians, to look upon capital—which as a permanent article is simply the accumulations of exertion—as a proper subject for spoliation, distribution and extortion, will arrest the progress of civilization to the extent of its success. Capital is the great civilizer; that is what clears up the wood-lands, builds the rail-roads, the turnpikes and the big barns; drains the low lands, enriches the uplands, plants out the orchards and vineyards, and gives rural life its greatest attractions. Civilization is a matter of percentage; the enterprise that will pay best will have most supporters, and capital should be left perfectly free to work out its destiny—by the operation of natural laws—without any taxation, except what a just distribution of social burdens necessitates."

"Joodge," said Jakobb, very solemnly, "every man's hand is against the poor man; bloated bondholders, over-fed monopolizers, gigantic corporations, all rob the poor man of his slender earnings, and make his life one of unceasing toil."

(That sounded as if it had come out of some coercive combination; that ancient institution of medieval policy, or the spread eagle blast of the Internationals.)

"Mr. Dunk," said I, "let us look at these burdens; who has the most votes at an election, the President of the United States, or the poorest voter that goes to the polls?"

"Same, I spose," replied Jakobb.

"Well, that is one burden; now whose children possess the best facilities in the public schools for acquiring an education, the rich man's or the poor man's?"

"Treated putty much alike, I believe."

"This is another burden. If severe sickness or sudden accident overtakes him, the hand of organized charity is stretched out to prevent him from suffering, and the tax-payer cheerfully endures the burden; if he has squandered his substance and his years, this dereliction is not laid to his charge, but like the former rich man who may be in the same predicament, if old age finds him unable to protect himself, the same hand is thrown around him, and extends its kind offices to his final resting place.

"Capital establishes and supports free scholarships in the different schools and colleges, in which a poor student may be educated without any tuition fees whatever.

"Capital builds an extensive marble palace, and fills its spacious apartments with orphan children, whom it educates and provides for.

"Capital establishes institutes for gratuitous instruction in the arts and sciences, that aspiring genius may not be smothered within the garments of poverty.

"Capital—as in that grand achievement of practical philanthropy, the Boston Library—builds up a grand intellectual distributing reservoir, and sends its hundreds of thousands of purifying streams of thought to gladden the homes of the children of labor, and light up garret and cellar with beams of unfading lustre.

"Capital taxes itself to defray all the expenses of the civil machinery, and in the harmony of its manifold operations, labor eats the bread of abundance.

"Look at the splendid record of its career! And if it has sometimes borne down on its victims with the soulless vigor of a corporation, the grasp of monopoly, or the hand of extortion and fraud, neglect of the principles of private success on their part, has done more, by means of extravagance and dissipation, to 'grind down' the masses than all the exactions of all other interests combined, and if the vague rumors of equal distribution—which fill the industrial atmosphere whenever its currents are controlled by combination—shall precede their accomplishment in fact, the administration of license would replace the scepter of capital with the sword of riot, and while it might arrest the power of capital for evil, it could never perpetuate a monument of equal excellence. And yet if capital, whose liberal hand is scattering gems of beauty everywhere on the earth asks the laboring man to help mend up the roads for a couple of days, as a slight return for its benefits, up springs a squad of demagogues, who thrive in commotion, and stimulate opposition to the movement because it's 'degrading' to work on the highways; the degredation is the votes they make out of it by their professed friendship for their victims; but these high-minded champions of popular rights don't make use of any 'degrading' practices to secure the votes of their 'friends!' Oh, no."

"It's unconstitushunal," said Jakobb.

"What part of the constitution is violated?" I asked.

"He hadn't seen it but had heerd so."

"I have never been able to find it," I said.

"It takes away a man's liberty," said Jakobb.

"So does shutting him up in a jury box, or making him take the witness stand."

"Mr. Dunk," I continued, "will you be kind

enough to state what principle of civil liberty the States of Pennsylvania, Ohio, Virginia, New York, Missouri, Georgia, and other States neglect or deny which we uphold? Are not life and property as secure there as here?"

"Anyhow," said Jakobb, "ye can't get that through; we're too many fur you!"

Mob reliance on numbers again; but he was wrong in his estimate; I have never seen but one laboring man I could not convince of the of the justice and desirableness of the system, and that was a drunken shoemaker, with a reputation which was unenviable, at least not to put too fine a point on it. I believe a canvass of the State in the interest of the truth would be decided in favor of the plan proposed.

In assemblies of worth and intellect, where the question was discussed, I have never heard any objections to the system, and as the money tax system is an admitted failure, I propose we *try* something else.

The annual outlay in Maryland for road repair is some three hundred thousand dollars, and yet rural Maryland annually sends up a loud groan from the mud-pits of its despondency, which is a very dear groan.

I believe an expenditure of a small portion of that amount under a proper system, would give us by gradual improvement, good hard roads throughout the year. From all which it will be inferred I take the same position held by the two gentlemen whose letters on the subject appeared in the February number of the *Maryland Farmer*, and submit the following as the principal features of the system suggested:

1. The adoption of a General Road Law for all the State.

2. The division of the whole State into Road Districts of one, two and three miles in length, according to population and character of road.

3. The levy of a tax, in proportion to property of each individual, sufficient to thoroughly repair the highways; that is to make them convex, with proper culverts and water-bars, and to place a sufficient number of guide-boards at the crossroads.

4. Said tax to be paid in labor on the roads by the parties living on or near the public highways, on the road used most by and nearest them.

5. All male persons over eighteen years of age (not physically disabled,) to work one day on the highways before the first day of June, and one day before the first of September.

Would it be improper in this connection to make an appeal to the controlling element throughout the State to keep this vital question of highway repair out of the maelstrom of partisan agitation? Let us agitate and discuss the matter with the deliberation its importance demands, not amid the fever and heat of a political campaign, when *votes* are the object of the strife, and not the welfare of the people, and as a convention of the people will be called in Baltimore to take action upon the matter, I trust every friend of progress in the State will be present, to assist in removing the tremendous evil of bad roads from the burdened shoulders of rural Maryland, that its social advancement may no longer be retarded by the impassable barrier to its success and happiness.

ROAD LAW.

The general features of the law proposed are presented below: the working details will be easily surmised: we should be pleased to hear from our readers, pro and con.

SECTION 1. There shall be appointed by the Governor a Commissioner of Highways, acting as road engineer, for each county in the State, who shall be removed only for incapacity, neglect or misconduct.

SEC 2. It shall be his duty, in conjunction with the County Commisssioners, to levy a tax upon the taxable property in the county which shall be deemed sufficient to repair the public roads thereof.

SEC. 3. The said tax shall be paid in labor upon the road near the premises of the persons so taxed, and in the road districts assigned them by the Commissioner.

SEC. 4. All tenants shall work out the road tax upon land occupied by them.

SEC. 5. The Commissioner of Highways, in conjunction with the County Commissioners, shall lay off the county highways into road districts of a distance best adapted to their repair.

SEC. 6. The Commissioner of Highways shall appoint a supervisor for each road district, see that the roads are promptly, regularly and efficiently repaired (*i. e.* convex, highest in the middle) within the time specified, issue directions to the supervisors in regard to the most effectual mode of repair, and require the said repair to take place each year, once before the 1st day of May and again before the 1st day of September, and also that all loose stones shall be thrown from the road previous to the 1st day of August, and also that all injurious and useless vegetation be cut down once before the 1st day of July and again near and before the 1st day of September, with the exercise of discretion in regard to such growth as may afford proper shade to the highway.

SEC. 7. The Commissioner shall, before the first day of February in each year, give to each supervisor a list of the persons taxed in his district, with the amount of tax in days for each person so taxed to pay. The supervisor shall then at the proper time give at least two days notice to each person on his list to assemble at a certain place on the highway for the purpose of its repair. And the persons so taxed shall be allowed the following rates of compensation:

For each pair of horses or working cattle, one day.....			
"	cart or wagon in use,	"	....
"	plow or scraper,	"	....
"	hand, over eighteen,	"	.....

SEC. 8. The Commissioner shall appear at each voting place in the county, regularly, and of which due notice shall be given, at least three times in each year, to consult with the supervisors and hear and decide such cases as shall arise under the operations of this act for his adjudication.

Sec. 9. In case of a refusal or neglect upon the part of any person taxed to comply with the provisions of this act, the Commissioner shall duly notify the said person of the charge against him, and the time and place of hearing the case, which shall be the regular time and place of the Commissioners appointment in the election district in which such person shall reside. Should the charge be sustained, the Commissioner shall give judgment against the said person to the amount of one dollar and fifty cents for each day of the said persons tax unpaid, which judgment shall constitute a debt against the said person upon the part of the county, to be sued for by the Commissioner and collected as such.

Sec. 10. The Commissioner of Highways shall repair such roads as shall not be repaired within the time specified at the expense of the delinquents, after five days notice to the same, and shall charge the said delinquents for the same, the full amount of said delinquents road tax, which when paid, shall be in discharge of the judgment rendered for neglect of the duties prescribed by this act.

Sec. 11. All male persons over eighteen years of age shall work one day on the roads previous to the first of May, and one day previous to the first day of September, or may commute the same at the rate of one dollar and fifty cents per day.

Sec. 12. The supervisor shall make returns under oath of the persons taxed, the amount of tax paid and remaining unpaid, to the Comissioner at his regular place of meeting in the respective districts, under a penalty of ten dollars, and shall be allowed two dollars per day for his services, the whole amount not to exceed ten dollars per annum.

Sec. 13. The County Commissioners, in conjunction with the Commissioner of Highways, are authorized to furnish such inplements to the supervisors as, in the exercise of a strict and judicious economy they shall deem necessary, the whole amount not to exceed $500 per annum.

Sec. 14. In case of special necessity, by virtue of a sparsely settled road district, public calamity or other sufficient cause, the above Commissioner, County and Highway, are authorized to supply any deficiency which cannot be met by the provisions of this Act, to the end that good roads, indispensable to the social happiness may be thoroughly and efficiently established.

This system also includes the appointment by the Governor of a State Road Commissioner, with general surpervisory and executive duties.

A STATE ROAD LAW.

To the Editors of the Maryland Farmer:

Reading Judge J. T. Mason's Memorial to the Legislature of 1870, I notice his prayer "that the respective owners of lands bordering on the public roads be required, by law, to keep the same in good condition and repair." Living many hundred miles from Maryland, you will easily perceive that I am in no way personally interested. My object in writing this is simply to suggest a more *just* plan than the one proposed by the Judge.

Suppose we have a farm two miles long, half a mile wide, the country road cutting through its whole length; the country being low, at places no outlet for water from the road without cutting a mile ditch, and *keeping it open;* no gravel or stone within three or four miles. Why, sir, it would be an absolute impossibility for the proprietor to keep this road in proper repair without ruinous effect to his farming operations. You may say this is an extraordinary case, but such cases exist, and even worse. In my opinion the following plan would be more *just* and work easier.

Let us take a county, and suppose it to be four hundred square miles. It would contain 400 sections of 640 acres each. Suppose, further, each section to be a farm, would give the number of 400 farmers. Let us suggest this county to be traversed by five county roads, from south to north, and five from west to east, would give the amount of 200 miles of county roads to the county. If these two hundred miles of roads were distributed evenly amongst the four hundred farmers, each would have one-half mile of county road to repair.

But the roads ought to be classified according to their location, condition and facility to obtain the required material for repair, such as gravel, stone, etc., etc. If classified into three classes, 1st, the worst; 2d, bad, and 3d, good, the distribution of the road ought to be made so as to give one-third if of the worst, two-thirds if of bad, and three-fourths if of good road. In distributing care should be taken that each farmer gets his road as near his farm as possible, and if difficulties should arise with regard to the location, it can easily be settled by drawing lots. The supervision of the road to be entrusted to a commissioner, elected by the people, *he being responsible* for the condition of the road.—We do not present this as a perfect system, but think it about as good a one as can be had, except where the population of the county is heavier.—Under such circumstances the best plan is decidedly to contract for the repairs of the roads, the expenses to be covered by a tax, (road tax.) The parties who take the contract have to give bond, and are under the control of a county road commissioner, who receives say 50 cents per mile he has to inspect. Suppose the contract was given for $10 per mile; it would amount to $2,000 per annum in the above mentioned county. To this the commissioner's pay, $100; total, $2,100. If the county contained 1,000 farms of the same size, each would have to pay a road tax of $2.10. Certainly a moderate tax for the privilege to travel on good roads.

L. A. Hansen.

Columbus, Miss., February, 1872.

Preparing Seed Corn.—An Illinois correspondent says: Soak doubtful seed corn in chloride of lime and it will come. If you soak seed corn in tar water in which a little copperas has been dissolved, the gophers and crows will give it a wide berth.

VARIETIES OF GARDEN BEANS.

The above embellishment we have kindly received from James Vick, of Rochester, New York, the great American Florist, and is one of the illustrations adorning the pages of "Vick's Illustrated Catalogue and Floral Guide for 1872,"—which for beauty and excellence has no superior in the world, each page being illustrated with the choicest flowers and vegetables. If any of our readers really want a gem in that way let them send ten cents and secure a copy. Two vegetables are represented—the asparagus, and the best varieties of beans. The following is a brief article on the culture of beans, which we extract from the Catalogue:

"Beans like a dry and rather light soil, though they will do well in any garden soil if not set out too early in the spring. Nothing is gained by planting until the ground is tolerably dry and warm. The Dwarf varieties grow from twelve to eighteen inches in height, need no support, and are planted either in drills or hills. The drills should be not less than a foot apart, two inches deep, and the seed set in the drills from two to three inches apart. The usual method in hills is to allow about four plants to a hill, and the hills two by three feet apart. Rows are best for the garden. A quart of ordinary sized beans is about fifteen hundred, and will sow two hundred and fifty feet of rows, or one hundred and fifty hills. Hoe well, but only when dry. Running beans are generally less hardy than the Dwarfs. The usual way of planting is in hills, about three feet apart, with the pole in the center of the hill. A very good way is to grow the running varieties in drills, using the tallest pea brush that can be secured conveniently. When the plants reach the top of the brush, pinch off the ends. The effect will be to cause greater fruitfulness below. In a stiff soil, especially, the Lima comes up better if planted carefully with the eye down, the hill a little elevated." The following describes the above figures:

Fig. 2.—Is the *Refugee*, a hardy, abundant bearer; not very early; one of the best for pickling, and will produce pods in about eight weeks from planting.

Fig. 3.—*Early China;* early, tender for string beans, and good for shelling.

Fig. 4.—*Early Mohawk;* a hardy, productive and exceilent string bean.

Fig. 5.—*Speckled Cranberry;* a running bean, tender for snap beans, and good either green or dry.

Fig. 6.—*White Kidney* or *Royal Dwarf;* one of the best for shelling, either green or dry.

Fig. 7.—*While Marrowfat;* clear white, almost round. First-class for use, shelled either green or dry.

Fig. 8.—*Early Valentine;* very early and tender for string beans.

Fig. 9.—*Early Rachel;* the earliest, very desirable.

Fig. 10.—*Large Lima;* a running bean, and the most delicious bean grown. It is tender, and needs good treatment and warm shelter and sun.

Fig. 11.—*Concord Pole;* a running bean, next to the *Lima* in quality, and easier grown.

Fig. 12.—*Giant Wax;* a new running variety, having thick, creamy yellow, waxy looking pods, very productive, and bearing a long time. It is rather tender.

Fig. 13.—*Wax* or *Butter;* a very popular variety of bush beans; pods waxy yellow, and black; solid, tender and stringless.

MORE WORKING CAPITAL AND MORE MANURE.

To the Editors of the Maryland Farmer:

Your very civil treatment of a few notes sent you last month, which were dignified into a "Review of January Number," makes me think I may venture again into the company of the sensible and practical contributors to your pages. I have no essays to write, but while roving through your's and other journals many thoughts come and go, which I feel that others too might be led to think and write about, to some purpose, and it is only proposed to note down some of these.

It was said in my February notes that there seemed to me not so much difficulty in getting laborers for our farms, as scarcity of ready money to pay them, and that such farmers as could furnish comfortable houses for farm hands, and pay them punctually, seemed to have little trouble of this sort. This leads me to remark further on the great and common evil our agriculture labors under of a want of *working capital*. Our landholders, even when their property is clear of mortgage, are often the poorest people in the community. People without land have been trained to some pursuit which they make available for a yearly income. The farmer knows nothing but working his land, and without capital to work with, cannot do that. He struggles on after a fashion, and he and his friends soon agree that "farming don't pay now." How much worse must the case be when there is a mortgage on the land, to be paid in time, with interest dogging him continually; yet

FARMING DOES PAY.

Having read about all that has been or can be said as to the profit of farming, and thought of it in all its phases, there is nothing in which my convictions are stronger than that farming of any sort will pay him well who follows it diligently and intelligently. But no one farms intelligently, however well he may understand his work, who does not use the means that he sees to be necessary to do his work. Knowledge of his business, necessary of course, is not sufficient without working capital that will command all the ways and means of success. In the old time days, now gone, the negroes of the plantation made an important element of the working capital. Labor at least was at hand, and it needed little more to satisfy the demands of the old system. But with labor comparatively scarce, and to be paid for in cash, all is gone that made the old manner of Maryland farming bearable. It will not stand the ordeal of the new circumstances in which we are placed, and it is safe to say that all who are too old to mend their old ways, and who are too dull to see the necessity for change, will find "farming does not pay now" to the end of the chapter.

But not such as these are the Messrs. Chairs, of Anne Arundel county, who, we are told, sold last year about fourteen hundred dollars worth of strawberries from two acres of land, or the hundreds of others in the same county and elsewhere, who of late years have been making fortunes at fruit growing and trucking. We mistake when we suppose that these branches of agriculture are greatly more profitable than others. The difference is rather that in these the old methods of treatment have been thrown aside absolutely, and a new system of cultivation applied, based upon *abundant working capital and liberal manuring*. The fruit grower and trucker knows that he *must* have these, and is successful in proportion to his skill in their use. The common farmer thinks he *may* do without them, and finds that "farming don't pay now."

MORE WORKING CAPITAL AND MORE MANURE.

If I were a writer on agriculture, I should put these words in capitals, make them conspicuous in every way, and whenever I should write, and whatever the subject, it should close after the fashion of the old Roman, *more working capital, more manure*. By working capital I mean ready money in hand for stocking the farm well with suitable implements of every description, working animals enough of the best quality, sheep and cattle for feeding, if that be part of the system, punctual payment of as much labor as can be profitably employed, and to provide suitable dwelling places for them; in fine, capital enough to provide without delay whatever may be needful for doing all the work of the farm in the most thorough way.

We must get to doing all we undertake in the best way, but chiefly the ploughing. There must be the best implements, and the best use of them. "*Deep* and *fine*" must be the word here. Plough and plough again; harrow and re-harrow; roll and keep rolling. Do market gardeners content themselves with turning a sod of three or four inches, and smoothing it down with a poor harrow to plant their crops upon? His neighbors would think one crazy who did so, or with not sense enough to get crazy on. Yet this is about the best that is done for thousands of acres of corn land in Maryland by people who think "farming doesn't pay." Besides ploughing well we must drain where it is necessary. The land must be put in all respects in the best condition.

But "manure enough;" how much is that? All that ten inches of broken soil will take. All that the market gardeners use. The truth is, these "truckers" are our model farmers. What they do is what general farmers must come to, and we had better begin soon. What does Peter Henderson say about best Peruvian guano? A thousand pounds to the acre, if we recollect right. But if we must

not follow a market gardener, what does Mr. Mechi say, whose selling crop is wheat? Twenty-five heavy loads of shed manure that has never had a shower of rain on it, made from fattening cattle fed full on barley meal and oil cake, and five hundred pounds of Peruvian guano to the acre. This applied to mangel wurzel to be fed to stock, and a few hundred pounds more when the wheat is sowed, Mr. Mechi thinks farming pays. His books show that he gets ten dollars per acre rent for his land, and eighteen per cent. for his working capital. He lays out annually a very large sum to buy food, and cattle to eat the food, knowing that often he will get no profit at all except in the manure that goes to feed his crops. "Twenty-eight bushels of wheat to the acre is the accepted average of all England," says the *Mark Lane Express*. Mr. Mechi's average is fifty-six.

But where are they to come from, the money and the manure? I do not know; I only know we must have them. Let us ask the truck farmers; they seem to manage it some way.

The bottom of my page leaves only room to say again, *more working capital, more manure.*

MARYLANDER.

A FARM CART WANTED.

To the Editors of the Maryland Farmer:

I have received the valuable and very interesting catalogue, and description of farm implements and machinery, issued by Messrs. Whitman & Sons. It is a really valuable agricultural document which every farmer in the State would do well to read and study, as well for its account of fertilizers and and other matters, as for its implement department.

I notice among other things, a light farm cart offered at a very moderate price. This suggests to me to call the attention of Mr. Whitman and other manufacturers of implements, to the English farm cart as described in Mr. Mechi's book, "How to Farm Profitably," page 234. The author speaks of the cart as being substituted with great advantage for the wagon in farm work. The comparative value of the two seems to have been much discussed, and he concludes with the remark: "I presume every one has read Mr. Hannam's admirable paper, at page 73, vol. II, of the Royal Agricultural Society's *Journal*. It exhausts the subject and settles the question. I, for one, am grateful to him for his valuable facts."

Without having had the opportunity of reading this article, it is very obvious, that in cost of construction, (despensing with one pair of wheels,) in ease and convenience in handling, turning, dumping, &c., there must be great advantage in a cart which has sufficient capacity of body to carry a large load, and to which there may be attached team enough to draw a load of any size. We have our time honored ox carts to which one, two or three yoke of oxen are attached. Is it not strange we have not thought of having horse carts, where two horses may go abreast, and four used if necessary? Oxen require somewhat peculiar management, and in old times there was always one or more negroes on the farm that had a genius for driving them. They will not be found so manageable with our ever-shifting labor of the present, and will become less desirable for farm work. On this account, we shall want a horse cart with a pole for two horses abreast.

Mr. Mechi's description of the English cart is something astonishing. He says: My carts are long, low and light—not exceeding 7 cwt—12 feet long, 7 feet wide; in fact they are Mr. Hannam's harvest-cart, but we use them for carting coals (2 tons,) corn (wheat 80 bushels, barley 100 bushels,) lime 80 to 100 bushels, hay 35 cwt., straw *ad libitum*, also for planks and bricks when we require them. My man brought home 80 trusses of hay to day—56 lbs. to the truss—with a pony and old horse that cost together, years since, £18. They never turned a hair although they came three miles. My wagon neighbors so often wanted to borrow the said carts, that I now charge 1*s* per day in self defense. I do not find the Scotch cart so useful; it is not large or low enough. Our light Essex three quarter carts do well for dung only, but Hannam's are always wanted, and at harvest we never use but one horse in them and a boy to drive. With four horses, four carts, and two boys to drive, we harvested quickly 80 acres of mowed wheat, and 20 acres of beans and peas. For carting home green crops they are most valuable. They are made for £10, each. I used to pay £14 or £15.

If Mr. Whitman would get up a cart somewhat after this fashion it seems to me he would do a public service, and find his account in it too. I am confident it would soon take the place of the more expensive and unmanageable wagon, and probably of the universal ox-cart of Southern Maryland.

Being in the way of it, I will make another suggestion arising out of an interesting description of the Steam Cultivator used in England by Prof. Cook of New Jersey. The teeth of the cultivator, which covers a breadth of seven feet, are said to be as long and as large as a man's arm, and curved like the prong of a manure fork. Worked by the steam engine the heaviest ground is broken like an onion bed to the depth of fifteeen to twenty inches. Such deep breaking is wanted only once in four or five years, but is of course impracticable in the absence of steam power. May we not however get a very serviceable implement on the same principle that may be used on land without sod, and which three good horses would operate to good purpose? The object is to break up well the sub-soil without bringing it to the surface, once in a rotation.—After a crop of corn, tobacco or other such crop, two or three teeth well shaped might be made to break in ordinary land a depth of twelve inches with great economy of labor. This is only a hint for those who are much wiser in working out the idea than a

COUNTRYMAN.

Horticultural.

ROOT-PRUNING THE PEACH.

The various influences of checking growth to promote the formation of fruit buds, and of ligatures and girdling to increase the size and early maturity of fruits have been long known to horticulturists. Wiring and girding the grape vine is well known to give larger and earlier berries, greatly at the expense of quality. Root-pruning trees that are too luxuriant, when performed under right conditions, does not seem to lessen the flavor, at the same time that it gives larger specimens which ripen sooner.

Dr. Hull furnishes the results of some experiments in root-pruning the peach which prove that it may be done to great advantage in the rich soils of that region, although they would not probably be so favorable in more sterile regions. To abridge labor, he performed the work with the plow. It was done in October.

The spaces between the trees of his peach orchard were plowed ten inches deep, one way, to within four feet of the trees, leaving the furrow four feet off from the stems. This furrow was widened and deepened by passing the plow several times. A plow with a coulter attachment was then run in the bottom, so as to cut off all the roots practicable. Drought and hard subsoil prevented plowing at right angles to these furrows till late the following Spring, when the work was completed. The whole labor on 1,800 trees was performed by one man with a team in five days. To have done the whole by hand would have been nearly impossible. The surface was handsomely smoothed afterwards.

The maturity of the crop was so much hastened that shipment of Hale's early peach were made on the first of July, and daily for twelve days afterward, when the crop from unpruned trees began to ripen. The difference was about two weeks in favor of the root-pruning trees. Both were treated precisely alike in every other respect. The fruit on the root pruned trees was much the larger—averaging from one-third larger to double the size. By way of comparison, the peach trees had the branches girdled when the peaches were about as large as hazel-nuts. These ripened their fruit nearly as early as the root-pruned tress, but the flavor, as usually happens in such cases, was poor, and the peaches insipid. But the fruit on the root-pruned trees was highly colored and of excellent quality.

The same improvement took place on plum trees similarly treated.

There is one part of this experiment on which we desire more information. Half the pruning, performed on the 20th of May, after the first pruning in October, must have been done while the trees were in a condition of active growth; and in a latitude as far south as Alton, we should expect by that time the peaches must have been nearly half grown. Cutting off a large portion of the roots (not one-half as many roots would necessarily escape both prunings) while the trees were thus in full leaf, must have had a very different effect on the trees from pruning while the trees were entirely dormant. The question is: How much did this late spring root-pruning vary the result? What would be the effect of ordinary root-pruning on early maturity? We should expect, from our observations at the East, that the difference would be slight. We should certainly advise great caution in cutting off large portions of the roots while trees were in full growth, except in the richest soils. We want more experiments.

How the Large Pears are Raised.

Mr G. F. B. Leighton, of Norfolk Va., has produced some of the largest pears ever grown in this country. In a late interview with this gentleman he told us that he has now in bearing six thousand trees, the most of them being Bartlett's, Louise Bonne de Jersey and Seckel. The soil upon which they are grown is a stiff, blue clay over-laying sand to the depth of three or four feet. In planting out pear trees, Mr. Leighton digs a hole in the clay some two or three feet deep and sufficiently wide for the roots to ramify and then bores a hole with a post auger through to the sand. This auger hole and a small portion of the large excavation is filled with sticks (cut brush); this forms a complete underdrain.

A soil to set the roots of the trees in is composed of tide washed muck, which is brackish, shell lime and the surface or alluvial earth. The trees grow with wondrous rapidity, and produce such fruit as has astonished fruit growers everywhere. First premiums have been taken far and near at the largest horticultural shows. Duchess d' Angouleme has been shipped to New York this season from Mr. Leighton's orchard weighing over thirty ounces, or about two pounds, forty-eight pears on the average making a bushel. This fruit brought twelve dollars per bushel, just twenty-five cents a piece for the pears. They retailed at fifty cents each upon Broadway.

Mr. Leighton much prefers the standard to dwarfs and plants his trees twenty-five feet apart each way. In a portion of his orchard he has dwarfs between the rows, but does not allow them to remain long enough to interfere with the full development of the standards.

Decomposed bone is used to revive the standards when they appear to be falling into a decline and works to perfection. The bones are broken up into small pieces and put into boxes or barrels with alternate layers of wood ashes, and kept moist until they are thoroughly decomposed